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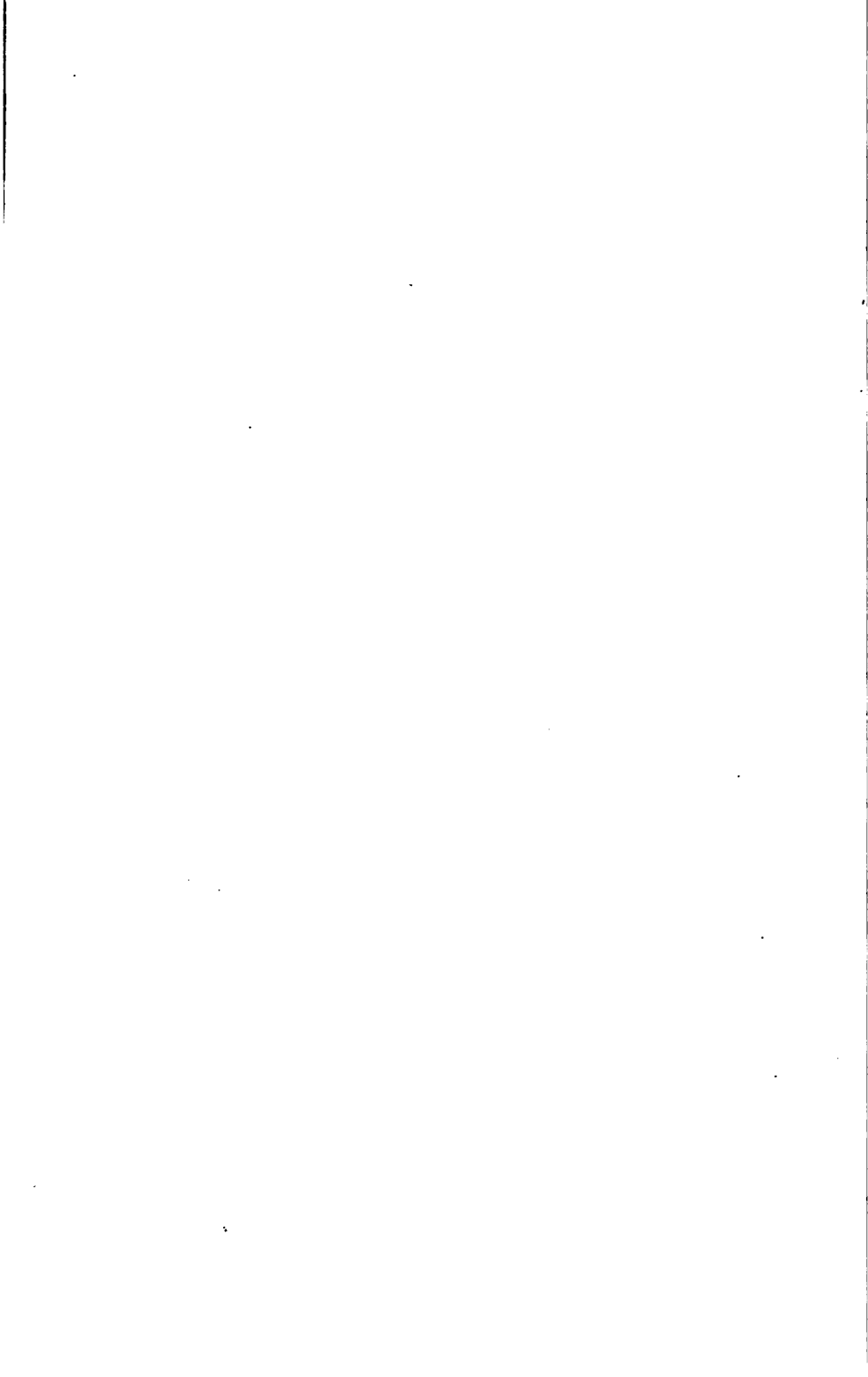
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VIEW
OF THE
ELEMENTARY PRINCIPLES
OF
EDUCATION.

WORKS

PUBLISHED BY THE SAME AUTHOR, IN ENGLISH.

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A
V I E W
OF THE
ELEMENTARY PRINCIPLES
OF
EDUCATION,
FOUNDED ON THE
STUDY OF THE NATURE OF MAN.

BY
G. SPURZHEIM, M. D.
OF THE UNIVERSITIES OF VIENNA AND PARIS, AND LICENTIATE OF THE
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P R E F A C E.

THE most important point in Anthropology or the study of Man, is to acquire a knowledge of his Nature ; and the next, to discover the mode in which his physical and mental constitution may be most advantageously improved. Men of eminent talents have considered the principles of education worthy of their attention ; and many works have been already published on this subject. It may therefore be asked, Why should another be presented ? Because education is still conducted in a manner very different from that in which it ought to be. Mankind has improved

less than we could wish: "There are many books," says HELVETIUS, "many schools, but few persons of understanding; there are many maxims, but they are seldom applied; man is old, but still a child." New elucidations of this subject, therefore, are still wanting; and I hope I shall be able to suggest some new ideas upon it. As, however, many ancient and modern philosophers have examined this subject, several of my ideas may be found in other writings; but nowhere are they reduced to the principles which I have adopted, and arranged in the same order. I hope also to succeed in pointing out some new objects, interesting in themselves, and leading to important results.

This, no doubt, will produce opposition. I am also aware of the active influence of prejudice,—of old habits and selfish pas-

sions; but nothing shall deter me from communicating what appears to me to be founded on the immutable laws of the CREATOR. His authority is the only one I acknowledge in natural history. Truth is independent of time; it must prevail, though it excite the hatred of the ignorant, the weak, and the jealous.

The reader is requested to bear in mind, that the language in which this treatise is composed, is to the Author a foreign one. A person so situate, is not always a competent judge of the nicer shades of meaning attaching to the expressions which he employs; and from this circumstance, together with the difficulty of commanding words to convey his ideas properly, he is liable to be betrayed into a tone of abrupt and apparently authoritative writing, quite foreign to his wish and intention. To

these causes the reader is requested to impute any thing in the manner of the following pages, which may appear not suited to the circumstances or the subject.

G. SPURZHEIM.

8, Gower Street,
London.

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ELEMENTARY

PRINCIPLES OF EDUCATION.

GENERAL VIEW.

THE preliminary points to be considered in this general view are, 1. The definition of the word Education; 2. The perfectibility of mankind; 3. The little success which has hitherto attended Education; 4. The singleness of the human species;—and, 5. The usefulness of Education.

As to the definition of Education, I think it necessary to state, that I intend to introduce in this volume several topics which are not generally considered as falling under Education in the common acceptation of the word, merely denoting instruction in literature and accomplishments; I use this term as embracing every means which can be made to act upon the vegetative, affective, and intellectual constitution of man,

for the purpose of improving this his threefold nature.

Being asked what I mean by human nature? I reply, that it is not body alone, nor mind alone, nor animal propensities, affections, or passions; nor moral feelings, nor intellect; neither is it organization in general, nor any system of the body, nor any particularity whatever;—but human nature, in the proper sense of the words, comprehends all the observable phenomena of life, from the moment of conception to that of death, both in the healthy and diseased state; or, in short, all the manifestations both of the body and mind.

The next introductory point to be elucidated is, whether human nature is susceptible of perfection or degradation.

In speaking of the susceptibility of being perfected, it is not to be understood that man may lose one faculty and acquire another; for the fundamental nature of man being unchangeable in body as well as in the faculties of the mind, such an event is impossible on earth. The meaning of the proposition, therefore, can only be, whether certain powers are capable of attaining

greater or less activity;—whether some of them may prevail over others; and, whether the mutual influence of the faculties and their actions may be regulated and well conducted.

In this latter signification alone, the answer is affirmative. Such a perfectibility exists in all living beings. Certain qualities of plants, for instance, may be strengthened, increased, weakened, or diminished. Fruit trees may be modified as to their growth or fruit, their produce. Each part of the bodies of animals is subject to great variations. Animals, also, are not confined to actions which their preservation requires. They modify their conduct according to the situation in which they may be placed; hence they are susceptible of a kind of education beyond their wants. Monkeys, dogs, horses, bears, &c. can be instructed to play various tricks. They have also a recollection of what has happened to them, and modify their conduct accordingly. An old fox which has escaped several snares, and knows that he is watched, takes greater precautions, and proceeds with more slyness, when he approaches the habitations of man, with a view of stealing poultry. A bird whose nest has been destroyed in a frequented place, conceives the necessity of placing it in future in a more retired situation;

and the construction of the second nest is also more solid and more perfect than that of the first. A dog resists its instinct to run after a hare, because it recollects the beating it has previously received on that account. The horse avoids the stone at which it once has stumbled. There are even facts on record of learned pigs and learned canary birds. Similar examples are within the knowledge of every one, and it is therefore unnecessary to multiply them. Yet this power of modifying their actions is not unbounded in animals, but limited according to their nature. Pigeons and hares, for instance, can never be taught to hunt like falcons and dogs.

Man offers similar appearances. The various modifications to which his body is liable, are known. The manifestations of the mind also vary in different persons, even in whole nations. Yet, as far as history informs us, mankind has always been essentially the same. The only difference, observed at different times, has been, that the manifestations of the special powers have been more or less active, modified, and variously employed.

The next question is, Whether man, with respect to his feelings and intellect, has improved

or degenerated. By some authors mankind is said to have arrived at a greater state of perfection than it originally enjoyed; while others lament its progressive degeneracy. The improvement or degeneracy of the human race, in regard to a knowledge of the external world, the practice of the fine arts, and moral conduct, are particularly to be examined. A detailed elucidation of these points would require a whole volume: it is my intention only to take a general view of them.

It is superfluous to mention, that the moderns enjoy a great superiority over the ancients with respect to every branch of natural history and natural philosophy. The Baconian and true method of studying Nature, founded on observation and induction, has been recently discovered and introduced. It has forwarded every kind of knowledge in an astonishing degree. It has, however, been unfortunately neglected in the study of man, and hence his nature is but little known. It is true, whatever it was in the power of man's reasoning faculties, unaided by observation, to discover, was discovered by the ancient philosophers. But the knowledge of man remained extremely vague and uncertain, and Phrenology alone will supply this defect, and reduce Anthropology to invariable principles.

In the fine arts of imitation modern artists find it difficult to surpass the ancient masters, yet they seem to be wrong in confining themselves to mere imitation of ancient productions; nature always remains the best model, inexhaustible in her modifications, whilst by the former proceeding the arts degenerate, or their improvement, at least, is impeded.

The arts of industry have undoubtedly improved, and political economy may be considered as a science of modern days. The state of mankind at large is evidently better than in ancient times and during the ages of darkness, and it will still improve in proportion as ignorance and immorality are removed, and the laws of the Creator attended to.

The improvement or degeneracy of man, as regards his moral and religious opinions, presents a particular interest, even with respect to his worldly happiness. Both these sorts of notions vary according to the different states of civilization, and they are, by no means, stationary, any more than the functions of every other faculty.

Savages commonly believe in polytheism, and generally consider all Superior Beings as malevo-

lent, and worship them through fear. People in a more cultivated state admit Superior Beings of a mixed nature, like men. The gods of the Greeks, for instance, were supposed to be endowed with all human feelings; they required food and sleep. Jupiter himself was not free from the human frailties: he was jealous, often cruel and implacable. He had overturned every thing in heaven, and reduced the other gods to be his slaves. The gods of the Romans were not more noble. They were mercenary, and could be bribed by fine temples, games, and more acceptable sacrifices. People of little instruction divided the invisible beings into benevolent and malevolent. Others admitted two principles; one benevolent, the other malevolent; and they acknowledged also many inferior deities, as emanations from the primitive ones. Persons of more cultivated minds believed in one supreme benevolent deity; and in inferior spirits, some benevolent, others malevolent. The most enlightened acknowledged only one Supreme Being, boundless in perfection, and the maker of every creature.

The mode of worship deserves equally a peculiar consideration in the history of mankind. It is always conformable to the notions entertained

of the nature of the Deity. In order to avert the wrath of the malevolent powers, and to please them, men have made themselves as miserable as possible, by mortifications, flagellations, painful labours, sacred victims, human sacrifices, and suicides. To gain the favour of manlike gods, sweet-smelling herbs, burning incense, oblations, gifts, agreeable impressions on the senses, ceremonies which illustrate a prince at his court, and various sorts of formalities, have been employed.

If we compare the absurdities of Paganism, or even the imperfect doctrines of Judaism, with the purity and sublime principles of true Christianity, we shall perceive that the latter are greatly superior. The Old and New Testament attribute very different qualities to the Supreme Being, and their moral precepts are very different. The old dispensation may be viewed as accommodated to the Jews, who were a hardhearted, stiffnecked, stubborn race.

The God of Israel was jealous, revengeful, terrible, and a God of war. He was fond of perfume, ornaments, ceremonies, burning incense, even of bloody sacrifices. He commanded his people to destroy those who forsook him, or who did not obey his commandments; even those who kindled fire on the sabbath-day. Neither brother,

sister, son, daughter, husband, wife nor friend, was to be spared, if he served another god. He who knew an infidel, was forbidden to pity, conceal or save him; on the contrary, it was his duty to stone him. (Exod. xxxv. Deuteronomy xiii.)

The God of Christians, on the contrary, is love, benevolence and charity. He is the Father of the whole of mankind, and wishes for universal happiness. He freely pardons, provided the sinner repent. He gives the same laws to all, makes no exception, and pays no attention to the appearance of persons; he judges, punishes, or rewards every one after his actions. He is a Spirit that cannot be confined to temples, and is to be adored in spirit and in truth. (John iv. Rom. ii. 1 John iv. Matt. vi. &c.)

The Jews were obliged to be faithful only to those of their own race; they were permitted to take usury from foreigners, and to hate them. David praised God in saying, "Do I not hate those who hate thee? I hate them with perfect hatred." (Ps. cxxxviii.) They were ordered to form a separate nation, and prohibited from intermarrying with other people. Their food was prescribed; many things were indurdicted and declared impure. Polygamy was lawful. Solomon

had seven hundred wives and three hundred concubines. The husband was allowed to put away his wife; it was sufficient to write her a bill of divorcement, &c. &c.

How superior and more noble are the principles of Christianity: they prohibit anger, hatred and revenge, and order us not to return evil for evil; they command forgiveness of every offence seven times in a day, and seventy times seven, if asked for; to love our enemies; to bless them that curse us, and to do good to them that hate us. They interdict all selfish passions, and declare our neighbour every one who does the will of God. CHRIST asked to drink of a woman of Samaria, whilst the Jews had no dealings with that nation. He associated with Jews and Gentiles, ate with publicans and sinners, and declared those only who do the will of his heavenly Father, to be his mother, sister or brother.

No food is an abomination to Christians. CHRIST said, "Not that which enters into the mouth defiles a man;" and St. PAUL declares to the Romans, "I know and am persuaded by the Lord JESUS, that there is nothing unclean in itself." CHRIST permitted only one wife, and in this respect re-established the law as it was.

from the beginning of the creation. (Mark x. 6.)

Before the Christian dispensation, empires were founded by the sword, and by the most cruel and frightful destruction of the vanquished.

CHRIST declared, that he came, not to destroy men's lives, but to save them; that he who exalts himself shall be abased. He made no distinction among persons, and considered love and peace as the aim of all commandments. He only *proposed* the doctrine of his heavenly Father for the acceptance of mankind, and did not enforce it by the sword. He directed his disciples only to shake off the dust of their feet in departing out of that house or city where they had not been courteously received, or where their words had not been attended to.

The superiority of the Christian principles above the Jewish law is evident. St. PAUL said to the Hebrews (iii.), that "CHRIST is more worthy than MOSES;" and (vii. 20.) "by so much was CHRIST made a surety of a BETTER Testament;" and, (viii. 7.) "if the first Covenant had been faultless, then should no place have been found for the second." True Christianity really

improves the moral and religious character of a Jew.

In regard to morality, it is indeed impossible to establish better principles than have been pointed out in the New Testament. But since these rules, unexampled in ancient legislation, have been established, the followers of Christianity have often fallen back to many of the contemptible doctrines of the heathen. Many points of importance have been neglected, and trifles adhered to. Pretended Christians, for instance, have disputed, whether it be permitted or not, to eat meat on certain days, in the same manner as Mahomedans dispute, whether coffee be or be not prohibited in the Koran. Notwithstanding these abuses, however, it is certain, that the precepts of moral and religious conduct have improved by degrees; and that many selfish and absurd opinions will be rectified, as soon as human nature shall be better understood. True Christianity will gain, by every step which is made in the knowledge of man.

Let us now see whether Education is advanced as much as may be desirable. Unfortunately we find, that notwithstanding the sublime principles of Christian morality, and the numerous master-

pieces of arts and sciences, it is a lamentable truth, that hitherto education has succeeded less than the friends of humanity wish for. Indeed, if we examine its influence on the improvement of mankind, a thousand years is like a day that is past. Who has not seen children of the most pious and exemplary parents indulge in scepticism, and plunge themselves into profanity and vice? And who has not observed that licentiousness often prevails in the most enlightened and refined classes of society? Who has not observed very limited talents appear in the offspring of men of the greatest genius? Now the inferences to be drawn from such facts are, that either the education has not been adapted to the natural dispositions of those individuals, or that every one is not capable of receiving the full effect of a good education; and as man in general hitherto has little improved by education, we must conclude that either he is less perfectible than we may wish for, or that the true means of improvement have not been employed. The latter cause seems to me the most probable, and it may be principally accounted for by our ignorance of the nature of man. Plants and animals succeed only if treated according to their natural qualities, and the education of man will not and cannot succeed without adapting it to his nature.

Some philosophers have endeavoured to degrade man to a level with the brute; while others have fancied that he has nothing whatever in common with the animal kingdom. By some the faculties of man are considered as the result of external impressions and accidental circumstances; while others believe that the existence of each person, and all the phenomena of that existence, are the effects of predestination.

I shall mention a few particulars concerning the great error, according to which the champions of education consider new-born children as blank paper, on which they can mark every impression. But, under such a supposition, why are children of the same family so different? Why can teachers not communicate their own talents to every pupil? Why cannot every one, who understands the masterpieces of genius, produce similar effects? Why is not every poet a HOMER,—every musician a HANDEL, a MOZART, a HAYDN,—every historian a TACITUS,—every speaker a DEMOSTHENES,—every painter a RAPHAEL? The rules which lead to perfection being pointed out, it would be easy for every one to put them into practice, if no innate powers were necessary. Experience, then, forces us to decide entirely against such speculative assertions; those who

have been engaged in conducting education are convinced that they are incapable of producing those talents and feelings in children which they could wish; and those who assert the contrary, maintain only dreams, and instead of observing nature, indulge in their fancy.

Many defenders of education wish to persuade us, that the first impressions in early age determine the direction of the mind. I do not deny their influence, but it is less than it is generally supposed to be. Children, in their early years, are almost exclusively intrusted to the care of females, yet boys and girls show from the earliest infancy their distinctive characters; and this difference between the sexes continues through life. A marked variety of tempers and capacities may be observed in children, as soon as they are susceptible of any impression. Children, like adult persons, are differently affected by the same external circumstances. Impressions, also, it is to be observed, are more or less permanent. How often, in the maturity of age, when the activity of the mind is the greatest, does it happen, that we are at one time perfectly acquainted with a subject, but afterwards forget it, as if we had never known it? How, then, is it possible to believe, that individual impressions, received at a

period when the mind is almost inactive, determine the character or the mental capacities of a child for his whole life? On the other hand, it is well known, that many individuals turn out very different from what they appeared at an earlier period of life. It must therefore be allowed, that the above mentioned opinion is destitute of all support from experience.

I do not hesitate to maintain, that education must fail, as long as we continue to think that children are born alike, and may receive, with equal advantage, every kind of education. If J. J. ROUSSEAU had had the care of children, he would have detected his erroneous conceptions: he would have observed, that Nature implants certain kinds of feeling; that education only weakens, or invigorates and refines them; that children react on external circumstances, according to their natural dispositions; and that it is necessary to adapt education to the nature of individuals. Hence, the first thing to be done, is to trace back the faculties of children to their origin. Such a knowledge will contribute to the advancement of arts and sciences, and to the improvement of moral conduct, by suggesting suitable means for directing the energies of children to the objects which they are most fitted by nature to

attain. "There are few subjects," says DUGALD STEWART, "more hackneyed than that of education, and yet there is none upon which the opinions of the world are still more divided. Nor is this surprising; for most of those who have speculated concerning it, have confined their attention chiefly to incidental questions about the comparative advantage of public or private instruction, the utility of peculiar language or sciences, without attempting a previous examination of those faculties and principles of the mind, which it is the great object of education to improve."—(Elements of the Philosophy of the Human Mind, p. 62.)

Another great error in education, also founded on our ignorance of the human nature, is, that every teacher takes himself as a model for his pupils. What he likes and learns with facility, he supposes ought to be equally liked and learned by every other person; while in every child, the feelings and intellectual faculties, though essentially the same, are modified in quantity and quality. Hitherto, on account of none of the systems of education being founded on a correct analysis of the faculties of man, education has been conducted altogether in a general way; and hence almost every individual who thinks for

himself when arrived at the age of maturity, has found it necessary to begin a new course of education, according to his individual character and talents.

Still another point, hitherto not sufficiently understood in education, concerns the organic conditions on which the manifestations of the mind depend. This is the object of a new doctrine, and is detailed in my work on Phrenology.

Thus education, though it does not create any power whatever, may produce great effect; but to that purpose its whole system must be changed, and this will be done in proportion as the nature of man becomes known, and as it will be acknowledged that man must be perfected like other created beings. He is the disciple of nature, and must submit to the determined sway which prevails in her government. He errs the moment he ceases to observe, and begins to excogitate. The construction of a system of education cannot be a creative but an imitative process, which must be founded only on the lessons of experience. Here, as in the cultivation of every other science, it is not by the exercise of a sublime and speculative ingenuity, that man arrives at truth, but it is by letting himself down to simple observation,—

by rejecting equally the authority of antiquity, and of eminent contemporaries, when in opposition to nature ;—by sacrificing every consideration that opposes the evidence of observation, and its legitimate and well established conclusions ;—by being able to renounce all the favourite opinions of infancy, the moment that truth demands the sacrifice ;—in short, by following only the lights of observation and induction. “ Does not our happiness depend,” says a contemporary writer, “ on the knowledge of the various relations which man bears to his fellow man and to his God, and the practice of the duties which they impose ; and how are we to discover these relations, except by the assistance of reason, operating on experience ? Can false views of human nature, and its attributes, increase the happiness of the human race individually ; or can political society, framed on such erroneous principles, attain the end for which alone society was framed ? ‘ Deception and mendacity are always regarded in the common and every day intercourse of life as base and odious,—Is it then only upon subjects of the highest importance to man, that he may be deceived without danger or detestation ? ’ ” (Retrospective Review, No. I. p. 71.) I concur entirely in these sentiments.

My ideas on the nature of man, on his fundamental powers; on their innateness; on the conditions of their manifestations in this life; on the moral liberty, and several other points, are exposed, with details, in works entitled, *Phrenology*; and, *Philosophical Principles of Phrenology*. I suppose these points to be known to those who take up this volume, composed merely with phrenological views, and founded on mere phrenological principles.

In treating of Education and Legislation, it seems important to examine, Whether there is only one species of the human race, or whether there are several? The great variety of bodily and mental appearances;—of features, complexion, size and configuration;—of feelings and intellectual powers,—must strike the most superficial observer. The causes of these differences have been examined, and various hypotheses have been invented to account for them. Some authors have had recourse to different original species; others have accounted for these modifications, by the common laws of nature. It is indeed natural to ask, Whether a Negro and a White Man, a Dwarf and a Giant, a Hottentot and Lord BACON, are of the same species? Whether the Cannibal, whose earthly and expected heavenly

pleasures are gratifications of the low animal passions, and the true Christian, full of kindness and benignity; whether he whose ingenuity is exercised merely in destruction and devastation, and he who beholds all creatures as objects of Divine providence and beneficence, were originally formed after the same image?

If there be several species of Man, there can be no universal principles of human conduct;—human nature cannot be included in any one system; and the rules which are suitable for one nation will not be fit for another. If, on the contrary, there be only one species;—general principles of education, general rules of conduct, and national laws, may be established. Moreover, if there were several species, and one superior to the others, the White to the Negro, for example, slavery might be contended for as an institution of Nature; but if the species be only one, neither the primitive moral character, nor Christianity, can excuse this most selfish of all barbarities.

I will not consider the arguments of those who, from inferior motives without any respect for human dignity, and without any religious or moral principles, or reproaches of conscience, force

other people to become the mere instruments of their selfish gratification. I shall examine only the reasons which natural history offers in support of the one or other opinion, that the human race consists of one species or of several. These reasons may be drawn from the external qualities of the body, such as size, configuration and complexion; its internal structure; the laws of propagation; and the manifestations of the mind.

In the elucidation of this important object, it is not sufficient to examine the external qualities alone. Such a proceeding is like that of LINNÆUS, who classed the animals according to their external appearances, and not according to their nature; or like that of a librarian who should class books according to their shape, size or binding, without regard to their contents.

Man is found in all climates; and hence some philosophers have inferred that there are several species of man. These philosophers reasoned by analogy, stating, that each climate has its own species of men in the same way as plants and animals are adapted to hot, temperate and frigid regions. Plants which grow in the torrid zone, perish in a cold climate, and those which flourish upon mountains decay on being removed to a

plain. The rein-deer, say they, is confined to the frozen region, and the white bear cannot live in a southern climate; while the elephant, rhinoceros, and many other animals, do not prosper in the frigid zone. Hence Nature has destined and fitted different beings for different climates, and she has guarded them against the natural vicissitudes of the seasons. To this end, in cold countries, animals are protected with more fat, and thicker hair. The same rule explains why plants and animals lose their qualities when removed from their native climate; and why, in several countries, the stock requires to be continually renewed. In northern countries, for instance, flax degenerates, and a quantity of seed is annually imported from southern regions. In the same way, to preserve, in some degree of perfection, the breed of Arabian and Barbary horses, frequent supplies from their original climates are requisite.

Lord KAMES, (*Sketches of the History of Man*, vol. i.) one of the principal champions of the opinion that there are different species of man, insists much on observations of this kind, and thinks them conclusive. He supports his assertions, by observing, that men, in changing climate, usually fall sick, and often run the risk of losing their lives. This argument, however, is not decisive.

The plants and animals adapted to different climates, are evidently of different species. This is not the case with the varieties of men. Moreover, as plants and animals can by no means alter or regulate the effect of external influences upon themselves, it is conceivable that peculiar species, fitted for every climate, should be created. Man, on the contrary, is able to remove obstacles, to overcome difficulties, and to modify, in a high degree, the effect of external circumstances upon his nature. On the other hand, the argument of analogy is not even general; for several animals, such as pigs, dogs, and others, follow man, and, sheltered by him, live in all climates.

It is certain that great changes of climate produce diseases. We must observe, however, that it is not a great difference of climate alone that produces this effect, but that all sudden changes of season, weather, situation, and mode of living, also expose us to the loss of health. In America, says the Reverend Dr. SMITH, ("On the Varieties of Men," p. 119.) "we are liable to disorders by removing incautiously from a northern to a southern State; but it would be absurd to conclude, that the top of every hill, and the bank of every river, is therefore inhabited by a different species, because in the one we enjoy less health

than in the other. The constitution becomes attempered in a degree even to an unhealthy region, and then it feels augmented symptoms of disorder on returning to the most salubrious air and water; but does this prove that Nature never intended such men to drink clear water, or to breathe in a pure atmosphere?" It may be added, that there are diseases of professions as well as of climates. Shall we maintain, therefore, that there is a species of man for every profession? Captain COOK, Captain KRUSENSTERN, and other navigators, have proved, that, with sufficient care, man can bear great changes of air, temperature, season and weather. They have preserved the health of their crews in long voyages, and in the most dissimilar climates. The human constitution is known, from positive observation, to become in time assimilated to every climate; and the offspring of foreigners, at length endure, like the aborigines, the external influence without injury. Thus, the argument that sudden changes of climate have a tendency to produce diseases, or even death, does not prove that there are several species of man.

The Reverend Dr. SMITH has clearly shewn, from another argument, quoted from Lord KAMES, that the latter was too credulous; that he was deceived by erroneous reports of superficial ob-

servers; and that he did not sufficiently understand the pliancy of the human constitution, which enables it to adapt itself to every climate, and to all external circumstances. The last remark that Lord KAMES makes, is a striking example against his own assertion. He says, that "the Portuguese colony on the coast of Congo, has in course of time degenerated so much, that they scarcely retain the appearance of men." Another assertion of his, is a complete specimen of his credulity. He is of opinion that the Giagas, a nation in Africa, could not have descended from the same original with the rest of mankind, because, unlike to others, they are void of natural affection; kill all their own children as soon as they are born, and supply their places with youths stolen from neighbouring tribes. Common sense, however, would answer, that if such a species were created, it could not continue longer than the primitive stock endured. The stolen youth would resemble their parents, not those who adopted them, and would soon be the sole constituents of the nation. Yet Lord KAMES thought that the Giagas formed a peculiar species, who continued from generation to generation to kill their children!

All organized beings are modified by external

influences, though their primitive nature is never changed. There is certainly no reason to believe that every kind of apple, pear, or other fruit-tree which we see in our gardens, has been the subject of a distinct creation, these varieties being produced by degrees. The specific character, however, is constantly the same; and one tree can never be changed into another,—an apple-tree, for instance, into a pear-tree.

The same law of modification prevails among animals. Their size, colour, and other qualities, are very different in different climates. There are varieties of horses eight times smaller than other races. Some goats have no horns; others have several. The pigs, also, of Scotland, Ireland, and Hungary, are very different, but it would be irrational to admit as many primitive species of these animals as there are varieties. Their specific character is always the same, and a pig can never be changed into a sheep.

As the body of man is subjected to the general laws of organization, why should it also not undergo considerable changes, and present great differences of appearance? This matter, on account of its importance, deserves to be examined more at large.

One of the most striking differences perceptible in the human race, as well as in animals, is to be found in the skin and hair, which are in the most intimate relation with each other, and indeed receive their nourishment from the same blood-vessels. They vary in thickness and colour, and evidently depend on climate. The ermine and weasel change the colour of their hair in summer and winter. The fur of wild animals grows thicker in cold weather, while under the heat of the torrid zone, the hair is coarse.

Among horses, oxen, rabbits, and other animals, some individuals of the same species are brown, black, or white, and why should it be thought absurd that there should be also variously coloured men? The only difference in this respect betwixt man and animals, seems to be, that man resists longer the influence of external circumstances, and that his skin requires a greater difference of climate to change its colour. It is a fact, however, that heat and extreme cold thicken the skin of man and darken his colour. We might naturally expect, what is indeed the case, that changes of the skin produced by climate, should take effect in a longer or a shorter time, according to the different degrees of civilization; for example, savages being exposed to the influence of

climate, suffer its full force; while civilized nations obviate, or even greatly prevent its influence.

Among the physical qualities of man, complexion is the most easily changed. The Portuguese in Africa are become black, but they have preserved their original configuration. The Jews in northern countries are fair; they become brown and tawny towards the south, but their configuration does not undergo proportionate changes.

It seems difficult to say whether the original colour of man was white or black; but it is certain that white people grow black sooner than negroes become white.

On the other hand, difference of size and form does not prove the existence of several species of man, more than that of several animals which vary greatly in this respect. The swine carried from Europe to Cuba acquires double its original magnitude. It is the same with the oxen in Paraguay. Climate, diet, and the manner of living, may produce such differences. Young animals of the same litter, treated with care, or neglected, well fed or reduced to starvation, will be quite different in shape and size. Children, when neglected, are emaciated, sallow, and their

features coarse and meagre. The poor, exposed to excessive hardships, are apt to become deformed, and diminutive in their persons; whilst luxury and excess also tend to debilitate and disfigure the human constitution.

Determinate feelings, too, when permanent and habitual, change the countenance and external appearance.

The most effectual means of producing differences, and of preserving those which exist, is propagation; and on this subject I shall hereafter enter more into detail.

Thus, the external differences of mankind may be explained by known natural causes, and are no proofs that there are several original species. A sound philosophy never assigns without necessity, different causes for similar effects. Small influences, acting constantly, will necessarily produce, in time, conspicuous changes in mankind; just as a succession of drops of water falling on the hardest rock makes a cavity. The first alteration in the external appearance of man is observed in the countenance, the next in the complexion, and the last in the size and configuration.

It may be added, that man may live every where, the flexibility of his body supporting different impressions ;—moreover, no obstacle, neither river nor sea, prevents him from continuing his excursions ;—he transports with him animals and vegetables, and prepares by art what he cannot use in the natural state ; and he knows how to shelter himself and other useful beings against noxious influences from without.

The internal structure of the body of man, also, indicates that there is only one species. To prove that there are several, it would be necessary to show that the number of the essential parts is not the same in all ; that Europeans, for instance, possess certain parts which Negroes have not. Whoever could demonstrate, that one part of the brain in Europeans is wanting in Negroes, would prove that there is a natural difference between them ; but so far as I am able to judge, the same essential parts exist in both, subject, merely, to modifications.

Another argument to prove that there is only one species of Man, may be founded on the manifestations of the mind. Every where, and at all times, the same primitive faculties, however modified the actions flowing from them may be, are to

be observed. Negroes, in general, are inferior to Europeans; yet some of the former excel in music, mathematics, and philosophy. BLUMENBACH (Goetting. Magazine, t. iv. p. 421.) and Bishop GREGORY have collected the names of Negroes famous for their talents. HERDER and RAYNAL, in various passages of their works, quote instances of extraordinary virtue and morality observed among savages and barbarous nations.

It has been reported, that there are nations without religious feelings; but more exact investigation has shown, that religious ceremonies existed, but had been mistaken for mere social amusements, such as dancing, singing, and fighting. It has frequently happened, that descriptions of savage nations have been given by travellers, who neither knew their language, nor the signification of their manners and customs. Almost all reports of this kind are founded on single observations. How erroneous, therefore, must they be, and how little to be relied on, particularly when they describe the customs of nations hostile to strangers. It is known, that savages frequently steal from foreigners, while they continue faithful to each other, like several criminals in Europe, who show great attachment and justice towards each other, and rather suffer

the greatest torments than betray their companions and friends, but who do not spare either the goods or the lives of other individuals. If a traveller, accustomed to the most brilliant ceremonies of religion, were to meet with a sect of the followers of CONFUCIUS, who have neither temple nor priests, nor any form of external worship; who adore the Supreme Being in mere inward contemplation, and in the practice of moral virtue, and he had no direct means of communication with them, might he not easily be led to think, that they professed no religion whatever? Hence, it is important to distinguish betwixt the faculties themselves and their application. Attachment, for instance, may act with respect to our native country,—to our friends,—to animals,—or to other objects,—yet the primitive impulse is the same in all these instances, although the external applications are very different. Courage may be shown in self-defence, or in defending others. He who is fond of approbation, may adorn himself with earrings, with girdles, with chains, or embroidery. Religious people, in like manner, may pay divine honours to a bull, to a serpent, to the sun, to saints, or to the God of Christians;—they may howl to the glory of invisible beings, or worship one Deity, by singing psalms, or by the practice of moral virtue, and all

of these acts may flow from the same primitive tendency to veneration.

Finally, propagation is considered as a means of determining whether animals belong to the same or to different species, according as they can or cannot engender together, or as their issue can or cannot procreate. Tried by this test, also, we must conclude that mankind form but one species.

However, it ought to be observed, that natural history can show only the possibility of mankind being derived from one original species, which, by degrees, has undergone various changes; but it cannot prove the reality of this fact, any more than it can ascertain whether the original colour of man was white or black.

Thus, in the following considerations, I shall take it for granted, that mankind is only one species, comprehending various races, endowed with the same primitive powers of body and mind. Yet, as the sense of smell, attachment, or courage, &c. is stronger in one dog, or in one race of dogs, than in another; so such or such a faculty may be more active in one man, or in one tribe, than in another, though both races are essentially of the same species.

There remains an important introductory point to be considered, viz. whether education, principally instruction, is useful; or, in other words, whether it is better to leave the common people in ignorance, or to instruct all classes of society?

To answer this query in a satisfactory manner, let us remember that the human mind embraces feelings and intellectual faculties; that intellect does not produce feelings, but that the latter are the main causes of our actions. Hence it is a great mistake to confine education to intellectual instruction. Education, then, if well conducted, embraces both feelings and intellect, and improves both the body and mind. Now a few observations will prove that education is preferable to ignorance.

There is a great difference in the actions of all nations, through the different states of civilization. The history of each at the beginning is stigmatized with assassination, parricides, incest, and violation of the most sacred oaths. The selfish passions, then, appear to have enjoyed an overwhelming power; and all enjoyments sprung from the gratification of the lower propensities. In periods of ignorance, too, all nations confined moral virtue to themselves, and supposed the rest

of nature destined to be their prey. Legislation corresponding with the national character at the beginning, is sanguinary; and capital punishment is common. Nay, it falls not on the criminals alone, but also on their relations, and on whole districts. Their religion is founded on terror, their gods are endowed with all the lower feelings and affections, such as selfishness, jealousy, wrath, and fondness for dreadful actions and expiatory sacrifices. If they hope for immortality, the scenes which they expect are conformable to their actual feelings; triumph over enemies, gratification of lower passions, and sensual pleasures. The whole tendency of the mind is atrocity; and their actions might almost be denominated a series of horrid crimes. I doubt whether those who consider the savage state so worthy of commendation, would be disposed to give up the comforts of civilization, and be satisfied with the food, clothing, habitations and accommodations of Barbarians; whether they would prefer roots, acorns, nuts, insects and other animals, at the sight of which we shudder, as their food, to the preparations of a skilful cook; whether they would be better pleased with clothes made of the skins of animals, of leaves or of grass, than with woollen, cotton, linen, or silk habiliments? Whether they would like to exchange our comfortable rooms for

a hollow tree, for the cavity of a rock, a den under ground, a hut of reeds, or of turf and branches of trees? Finally, Whether they would seriously think the rough attempts of savages at painting and sculpture, equal to the statues of PHIDIAS, and the paintings of RAPHAEL?

In following the history of mankind, we observe, that, in proportion as nations cultivate their moral and intellectual powers, atrocious actions diminish in number; the manners and pleasures become more refined, the legislation milder, the religion purified from superstition, and the arts address themselves to the finer emotions of the mind.

By observing also the different classes of society, and the inhabitants of different provinces, we learn, that ignorance is the greatest enemy of morality. Wherever education is neglected, depravity, and every kind of actions which degrade mankind, are the most frequent. Among ignorant persons, *cæteris paribus*, rapacity, cheating, and thieving, drunkenness, and sensual pleasures, are prominent features in the character.

Those then who object to the instruction of the lower orders, can merely act from selfish mo-

tives. Being aware of their superiority, they may wish the inferior classes to be obedient to their arbitrary regulations; for unquestionably, it is much easier to lead the ignorant and uncultivated than the instructed and reasoning people. Knowledge too, and the habit of reflection, detect abuses and errors, which selfishness and pride may wish to keep concealed. But whoever thinks it right to cultivate his own mind, cannot with justice desire others to remain in ignorance. He, therefore, who is versed in history, or understands the law of Christian charity, will join those who contend for the benefit of an instruction adapted to every class of society. This then will not be confined to reading and writing, but particularly extended over the moral conduct and all duties and rights in practical life.

The education of the body is called Physical, that of the mind, Moral. It is, however, impossible to decide by observation, whether education modifies the mind itself. We can only show, that we may exercise an influence on the instruments by which the powers of the mind manifest themselves. Hence, the study of the organization is necessary, even with respect to the moral education of man; and for that reason, I avoid the common division of education into physical and

moral, though I find it proper to divide the following considerations on education into two Sections. In the first, I shall speak of the conditions which contribute to the greater or less activity of the powers of the body and of the mind ; and in the second, of their aim and direction.

SECTION I.

ON THE CONDITIONS OF EXCITEMENT; OR
THOSE WHICH CONTRIBUTE TO THE ACTI-
VITY OF THE INNATE POWERS OF THE
BODY AS WELL AS OF THE MIND.

THESE important inquiries are not sufficiently understood, and are therefore too generally altogether overlooked. They, however, deserve the most serious attention of every natural philosopher. Our reflections on them may be divided into four Chapters, corresponding to the natural divisions of the conditions of excitement themselves. The first condition is founded on the Laws of Propagation, or hereditary descent; the second on those of the Vegetative Functions; the third on Exercise; and the fourth on the Mutual Influence of the Powers.

CHAPTER I.

ON THE LAWS OF HEREDITARY DESCENT.

THE developement of the human body is favoured, retarded, or disordered, according to the general laws of organization, in the same way as that of other living beings. Consequently children participate in the bodily configuration and constitution of their parents, and also in their tendencies to particular manifestations of the mind, these being dependent on the individual parts of the brain. The elucidation of these subjects is indispensable to a sound system of education. Nay, I am convinced, that this condition exerts a greater and more permanent influence than any other which can be introduced with the view of perfecting mankind. Let us first consider how other organized beings are improved.

Florists, pomologists, and horticulturists, are aware that Nature produces the varieties of plants, and they observe the circumstances which are favourable to the improvement of certain qualities.

They know that the first and most important point is ripe and well-conditioned seed ;—the second a fertile and convenient soil. In short, it is a fact, that, in order to improve the vegetable kingdom, propagation is attended to.

In perfecting animals, or in promoting their peculiar qualities, such as the colour or figure of horses, the wool of sheep, the smell of dogs, &c. country people have recourse to the laws of propagation. By these means, farmers have succeeded in diminishing or increasing various parts of animals, such as their bones, muscles, &c.

We might naturally suppose, that it would be sufficient to mention the fact, that the organization of man is submitted to the same general laws as that of animals, to induce reasonable beings to take at least the same care of their own offspring as of their sheep, pigs, dogs and horses. But man wishes to make himself an exception from the immutable laws of the Creator, and the result of his ignorance and self-conceit is lamentable. As this subject is of the utmost importance, I shall enter into a few details upon it.

For the sake of bodily health, many natural philosophers, a long time ago, insisted on the

necessity of a better regulation of marriage. Their benevolent desire was supported by the constant observation, that health depends on organization, and that the latter is propagated by birth. "Sir JOHN SEBRIGHT," says Dr. ADAMS, (*On the Pretended Hereditary Diseases*, p. 38.) "informs us, that if a flock of sheep, in which there is any defect, are permitted to breed in and in, the defect will gradually increase among them; and Colonel HUMPHRIES, by selecting for breeding a marked variety, has succeeded in procuring a flock with deformed bones." Dr. ADAMS adds, that if the same causes operate in man, we may impute to it many endemic peculiarities found in certain districts, which have hitherto been imputed to the water, and other localities.

Those who have more confidence in facts than in speculative reasoning, cannot doubt that the qualities of the body are hereditary. There are family-faces, family-likenesses; and also single parts, such as bones, muscles, hair and skin, which resemble in parents and in children. The disposition to various disorders, as to gout, scrofula, dropsy, hydrocephalus, consumption, deafness, epilepsy, apoplexy, idiotism, insanity, &c. is frequently the inheritance of birth. There are

few families where there is not one part of the body weaker than the rest,—the lungs, for instance, the eyes, the stomach, liver, intestines, some other viscus, the brain, &c.

Children born of healthy parents, and belonging to a strong stock, always bring into the world a system formed by nature to resist the causes of disease; while the children of delicate, sickly parents, are overpowered by the least unfavourable circumstance. Medical men know very well, that in curing diseases, nature is oftentimes more powerful than art, and that the latter is ineffectual, if not assisted by the former. Longevity also depends more on innate constitution than on the skill of physicians. Is it not then astonishing, that this knowledge, as a practical piece of information, is not taught to and disseminated among young people? Indeed, it ought to be familiarly and generally known; not because it is expected that every one would be reasonable enough to regulate his conduct by it, but in order to induce as many as possible to do so. A great number are too selfish to be guided in their own enjoyments by a regard to the condition of their offspring; but many, on the other hand, who reflect on the future, may be induced to avoid, even from a selfish motive, a union with a person who will be

likely to 'embitter' their future days. Even the unthinking must perceive, that the enjoyments of life are rendered impossible, when diseases make their ravages in a family; and that love for the most part ceases, when poverty takes up its abode in the house. Others, who wish to live in their posterity, will, when acquainted with the immutable laws of the Creator, submit to them, in order to lay a foundation for the prosperity of their descendants.

The laws of hereditary descent should be attended to, not only with respect to organic life, but also to the manifestations of the mind, since these depend on the nervous system. There are many examples on record, of certain feelings, or intellectual powers, being inherent in whole families. Now, if it be ascertained that the hereditary condition of the brain is the cause, there is a great additional motive to be careful in the choice of a partner in marriage. No person of sense can be indifferent about having selfish or benevolent, stupid or intelligent children.

An objection may be made against the doctrine of hereditary effects resulting from the laws of propagation, viz. That men of great talents often get children of little understanding, and that in

large families there are individuals of very different capacities.

This observation shows at least that the children are born with different dispositions, and it proves nothing against the laws of propagation. The young ones of animals that propagate indiscriminately, are very different; but when the races are pure, and all conditions attended to, the nature of the young can be determined beforehand. As long as the races of mankind are mixed, their progeny must vary extremely. But let persons of determinate dispositions breed in and in, and the races will become distinct. Moreover, the condition of the mother is commonly less valued than it ought to be. It is, however, observed, that boys commonly resemble their mother and girls their father, and that men of great talents generally descend from intelligent mothers. But as long as eminent men are married to partners of inferior capacities, the qualities of the offspring must be uncertain.

The age of propagation too is not indifferent. Animals are not permitted to propagate at all ages, neither too young nor too old, but in the period of their strength. Men of talents and science often marry when their body, particularly

the nervous system, is exhausted by protracted studies and debilitating causes. They are seldom rich from birth, and their condition rarely allows them to choose during the period of their greatest energy; yet they might often accomplish more than they do to the benefit of their offspring, were they better acquainted with the laws of the hereditary descent, and the dependence of the mind on the organization of the body, and would they submit to appreciate such laws more than fashionable manners and customs.

The age of the parents is of great importance both in regard to their own health, and to the constitution of their children. Young trees which bring forth fruit are weak; animals that propagate their species too early in life, generally do not grow strong. Many women who marry when very young, and bear a very numerous family, become early victims to an exhausted constitution.

Farther, the fruit of young plants is imperfect. The eggs of young birds are very small; the progeny of young quadrupeds is feeble and diminutive; and, in like manner, the offspring of living beings, when old, is weak. Such a progeny, therefore, is never destined, by country people, to the preser-

vation of the species. MOSES forbade the Jews to bring up the first ^{ling} ~~born~~ ^{ling} of animals. (Deut. xv. 19—23.) When both parents marry early in life, and get a numerous family, the first-born commonly possess less talent than those who are begotten during the period of vigour of their parents.

The laws of degeneration belong to those of propagation, and deserve a peculiar attention. They again are general throughout all nature. Plants cultivated on the same spot degenerate. Wheat must alternate with barley, flax, potatoes, or other plants. Where firs will no longer grow, beeches will succeed. The seed of plants that degenerate, ought not to be taken for propagation, for they at length perish entirely: nor ought the sickly organization of one tree to be engrafted on another. In this way, we see an explanation why the same sort of fruit-trees dies in whole districts, the external circumstances of which are unfavourable. The sickly condition of the tree is constantly propagated, and it dies at last by the continual and noxious influence from without. All trees, or parts of the same tree, perish a little sooner, or resist a little longer than others, on account of the influence of the branch on which they are engrafted.

The same law of degeneration prevails in animals. Various circumstances weaken their constitution, and, among various conditions, to prevent degeneration, it is necessary to cross the breed, and to renew the blood.

The degeneration of man, too, is certain, in families who intermarry among themselves. Uncles and nieces, or first cousins, who do so, get no children, or their progeny is commonly feeble. The smaller the number of choice, the quicker the degeneration takes place, and no class of society can be made an exception from this law. Any bodily or mental affliction which may happen to originate in one individual soon affects such families. This frequently happens among the rich and high ranks; and, as their manner of living is not conducive to bodily strength, it is quite natural that there should be so many living proofs of the truth of this proposition, which invites the friends of humanity to admire the law of compensation.

The great influence of propagation is ascertained also by the fact, that it is infinitely more easy by it to keep up natural changes, and even deformities, than to produce them by art. Deaf people often get children with the same defect; while circumcision among the Jews and Maho-

medans has not yet become superfluous. It is more probable that a man born without an arm should get children like himself, than that he should do so whose arm has been taken off by the knife of the surgeon.

The influence of propagation is still visible, since the greater number of first-born children are girls; since in one year more girls, in another more boys are born; since, when old and weak men marry young and vigorous females, the greater number of their children are girls, &c. These effects must have adequate causes, and by more patient attention to the phenomena than has hitherto been paid, some valuable conclusions might be arrived at. May not the particular and transient state of the same parents, at different periods, account, in some degree, for the differences in their children? *Seminis uterique conditio maximè est momenti.* At all events, the bodily constitution of both parents, in every respect, ought to be attended to. MOSES (Leviticus xii. 2d & 5th) ordered a longer period for the purification of a girl than for that of a boy. Is there a natural reason for his having done so? Can any inference be drawn from the observation, that the greatest number of monsters are amongst the female sex?

It is indeed a pity that the laws of propagation are so much neglected, whilst, by attention to them, not only the condition of single families, but of whole nations, might be improved beyond imagination, in figure, stature, complexion, health, talents, and moral feelings. I consider with ARISTOTLE, that the natural and innate differences of man are the basis of all political economy. He who can convince the world of the importance of the laws of hereditary descent, and induce mankind to conduct themselves accordingly, will do more good to them, and contribute more to their improvement, than all institutions, and all systems of education. Yet they embrace more than a choice, according to the beauty of configuration and to the vigour of body and mind. The state of health of both parents, their age, their previous manner of living, contribute to the developement of the embryo; and the state of health of the mother, during pregnancy, is likewise of great weight.

“It is probable,” says Dr. RUSH, “that the qualities of body and mind in parents, which produce genius in children, may be fixed and regulated; and it is possible the time may come, when we shall be able to predict with certainty the intellectual character of children, by know-

ing the specific nature of the different intellectual faculties of their parents. The marriages of Danish men with the East Indian women produced children that had the countenances and vigorous minds of Europeans; but no such results appeared in the children of the East Indian women who intermarried with the males of any other European nation." ("On the Influence of Physical Causes on the Intellectual Faculties," p. 119.)

Three successive generations appear to be necessary to impregnate a race to a certain effect. "Si le goître," says Dr. FODERE, "n'est qu' accidentel, et qu'il n'y ait qu'un des parens affecté, les enfans ne naissent pas goitreux. Si de père en fils un goitreux a épousé une goitreuse pendant deux générations, et dans un pays où le goître est endémique, à la troisième génération l'enfant qui naît, n'est pas seulement goitreux, mais il est encore cretin." ("Traité du Goître, et du Cretinisme," Paris, 1800, p. 69.) According to the laws of the creation, therefore, it is said, that "the Lord visits those who hate him (in my opinion who do not submit to his laws), to the third and fourth generation;" viz. by their hereditary dispositions.

Such causes as produce what is called the old

age of nations deserve to be remarked. Luxury undoubtedly belongs to them, and its influence, if continued during several generations, weakens body and mind, not only of families, but of whole nations. The degeneration of the organic condition of man, in general, is not sufficiently understood, and is of greater effect than the political economists of modern days are aware of.

The Reverend Dr. SMITH, who ascribes particularly the variations of man to external circumstances, says, "that Germans, Swedes, and Frenchmen in different parts of the United States, who live chiefly among themselves, and cultivate the habits and ideas of the countries from which they emigrated, retain, even in our climate, a strong resemblance to their primitive stock. Those, on the contrary, who have not confined themselves to the contracted circle of their countrymen, but have mingled freely with the Anglo-Americans, entered into their manners, and adopted their ideas, have assumed such a likeness to them, that it is not easy now to distinguish, from one another, people who have sprung from such different origins."

On a closer examination, it will be found, that one stock may adopt the manners of another, a

Saxon, for instance, the fashions of the French, but that the original features of the tribes will be preserved, as long as they do not intermarry. The genuine races of Highlanders and Lowlanders of Scotland will not lose their originality by exchanging their countries, but by intermarrying with each other.

The Jews are a striking example, that climate and external influences are less powerful in changing man than propagation. They are dispersed in every country of the globe, and though, owing to the climate they have inhabited, their complexion may have changed, yet, being prohibited by sacred institutions from intermarrying with other nations, they are still distinguishable from other people.

The ancient legislators were very attentive to the laws of propagation. MOSES complains (Gen. vi.) that the sons of GOD saw the daughters of men, that they were fair, that they took them wives of all which they chose: he divided his people into tribes, but prohibited, on pain of death, the sexual intercourse betwixt near relations. (Levit. xviii.)

The Greeks, as appears from their customs, phi-

losophy and legislation, had particularly in view the beauty and vigour of the human constitution. "As we," says PLUTARCH, ("De Nobilitate,") "are anxious to get dogs and horses from a good breed, why should we marry the daughters of bad parents?" PLATO spoke against marriages betwixt relations. He, as well as SOLON and ARISTOTLE, considered also the age at which it was best to marry. The ancient philosophers commonly fixed it between eighteen and twenty-four for a woman, and between thirty and thirty-six for a man.

It may be replied, that these considerations can never become practical rules of conduct for society at large. In the actual situation of things I will not maintain the contrary. But we must also admit, that the laws of the Creator will not change to gratify our fancy. If we will not submit to his dictates, we have no right to complain of being punished by unavoidable though disagreeable results. Christian principles are not sufficiently exercised in society, yet it is not, on this account, considered superfluous to teach them; and he who loves mankind will wish for their promulgation. Now, the laws of hereditary descent are in the same situation. Nay, if observed, they would even tend to prepare mankind to receive and keep the precepts of Christianity,

which, in the actual and common way of Providence seems impossible.

I find it also necessary to obviate another objection which may be made by religious persons, who are not aware that the letter kills, while the spirit vivifies. Some, who are entirely unacquainted with natural causes, and who expect all from supernatural influence, may be offended by so much being ascribed to the laws of organization. If they reflect, and will be consistent with themselves, they cannot reject any thing that is in nature, and the work of the Creator. The organization is constituted by the same Almighty Being whom they implore to be propitious. If they will submit to Him, they must acknowledge every law of creation. The primary arrangements of Nature as certainly proceed from Him, as any subsequent revelation. Shall we, then, have no recourse to natural means to cure diseases, because St. JAMES has admonished us, if any one is sick, to call for the elders of the church, to let them pray over him, anointing him with oil? We read in the Old Testament, that ELIAS prayed that it might not rain, and it rained not on the earth for the space of three years and six months; and he prayed again, and the heavens gave rain, and the earth brought forth her

fruit. Shall we therefore not study the laws of vegetation, and cultivate the vegetable kingdom? Shall we neglect to sow, and expect that by means of prayers we shall be permitted to reap? In the same way, if, while we say prayers, we do not at the same time submit to the laws of organization, supernatural influence alone will not give talents nor bodily health. The laws of the Creator have been the first dictated, and must be the first obeyed. A parent who perceives that his child is affected with disease and a weak constitution, and who, while he prays to God for restoration of his health, leaves him in confined air, and under the charge of careless or ignorant servants, has no right to expect that supernatural influence will be exerted in his favour, while he continues to neglect his own duty in contemning the first laws of creation. The Supreme Being gave us understanding that we might perceive these laws; and having perceived them, it is our first duty to obey them as His dictates; and having done so, we may then, but not till then, expect His blessing to attend us. This special obedience is an indispensable condition to the improvement of mankind; and nothing but ignorance, superstition and prejudice can oppose it.

The influence of the laws of propagation may

be shown to young persons, first in plants, then in animals, and at the end in mankind. Many parents are cautious and fearful of speaking of such notions to their children, and do not think of the anxiety with which children look for information of that kind, and of the benefit they may derive from it. Such information, when given by the parents, will be received with confidence and respect. Some young persons will possess reflection enough to attend to their bodily health, from the consideration that their constitution will be communicated to their offspring. I know positively, that such a proceeding has been more effectual and beneficial, than endeavouring to prevent children from acquiring any knowledge of that kind, or to conceal the effects of the disorderly satisfaction of physical love. This propensity deserves the same attention which we pay to hunger and thirst. Both are active without our will; and their activity must be directed. Why should we not have recourse to the understanding as far as possible, to regulate the actions, and employ natural means of correction against natural faults? How can we expect that children should suppress a strong internal feeling, without being acquainted with the bad consequences of its abuses, and with its destination? It seems therefore advisable to show the dreadful effects of Onanism to these

who are inclined to this aberration ; at first with respect to their own health, and afterwards in relation to their offspring.

It has been my object in this Chapter to bring under consideration a most important point, which must precede, and which will influence whatever remains to be done in education. Yet I do not deny the efficacy of various other conditions which I shall examine in the following pages.

CHAPTER II.

ON THE LAWS OF THE VEGETATIVE FUNCTIONS.

It is reasonable, when we desire the improvement of any living being, to employ all the means which may contribute towards its perfection. We have seen in the preceding Chapter, that man is born sickly or healthy, deformed or well shaped, an idiot or a genius,—in short, that the human being enters life with the greatest modifications of bodily and mental endowments. The innate constitution, then, which depends on both parents, and the state of the mother during pregnancy, is the basis of all future developement.

Being placed in the world, man is subjected in

every respect to the laws of organization. Organization is influenced by light, air, climate, nourishment, bodily exercise, rest, sleep, cleanliness, and excretions. The body of man, like other organized beings, undergoes various changes: it begins, increases, arrives at its full growth, decreases, and dies. There is a certain regularity in the succession of these natural changes; and accordingly, the duration of life is divided into different periods, commonly called ages.

These changes cannot be entirely prevented, but they may be accelerated or retarded by external influences. The regulation of all the conditions which contribute to the developement of the body and of its parts, and to the duration of life, constitutes what is termed Physical Education.

I shall not endeavour to explain Life. I am satisfied to say, that it embraces all the vital functions from conception to death. It certainly depends on various conditions, several of which are not yet sufficiently understood. The chemical explanation is not more satisfactory than that founded on mere mechanical laws. Life is more than the effect of a machine, more than a crystallization. The life of man is also more than the organization of a plant, and even more than that

of an animal. Some fluids belong to its necessary conditions, such as caloric and the electric fluid; but it remains undecided how far some ancient and modern physiologists are right or wrong in speaking of a peculiar Vital Principle, which in ancient times often was called the Soul of the World; and which sometimes has been confounded with the immortal soul of man.

The modern physiologists consider rather the functions of man than the principles of which he is composed. They place together the functions without consciousness, and call them Automatic Life; while the functions with consciousness are known under the name of Animal or Phrenic Life.

It is not yet generally admitted, that the phrenic as well as automatic functions depend on the organization. Physical education, however, evidently rises in importance, if the manifestations of the mind are modified in energy and quality by the influence of the body.

In this respect various opinions have prevailed, and still prevail. There is an ancient belief in oriental countries, that the body prevents the soul from communicating with superior beings, and from exercising freely its powers. PYTHAGORAS,

PLATO, and almost all metaphysicians, fancied, that in this life thoughts might be manifested without the medium of organization. The body was considered as a prison of the soul. Hence the great tendency to deliver the immortal soul from the mortal body; hence the spontaneous vexations and torments of the body; and hence many nonsensical ideas of castigation.

This opinion, however ancient it may be, is yet erroneous. Experience, which must constantly guide our reasoning, proves the dependence of the mental operations on the body during this life.

The duration of life is commonly divided into Infancy, Adolescence, Adult and Old Age. With respect to physical education, the time from birth to that of full growth, is the most important. It is preparatory for the rest of our days, and has also a great influence on our offspring. It may be subdivided into several periods, the first of which is that from birth to two years, or to that of the first dentition,—I call it Infancy: The second from two to seven years, or to the second dentition, viz. Childhood: The third from seven years to puberty, viz. Adolescence: The fourth from puberty to full growth, or to the Period of Marriage.

Before I enter into details on these periods, I shall notice some general considerations, and begin with Longevity.

It is not probable that the life of man has diminished with the duration of the world ; it is more reasonable to suppose, that the years mentioned in the Old Testament were shorter than ours. It is a common observation, that the same term has quite different meanings among different nations, and even in the same nation at different periods of its history. The English and Germans, for instance, measure the distances of localities by miles ; but it is known that about six English miles make only one mile in Germany. In the same way, it may be that the expression *year*, did not always denote the same lapse of time. It is also possible that the duration of a family, that is, of all male descendants, was considered as the continuation of the same life, as it is still a common saying, that parents continue to live in their children. Men, like quadrupeds, commonly live in the state of nature five or six times longer than they grow ; and many individuals of the human race arrive still at an age corresponding to these proportions. But there is no reason to suppose that the Jews made an exception from the physical laws in general, whilst on the other hand, it is

more probable that life, generally speaking, is shortened by artificial means, rather than by the lapse of time since the creation.

Among the causes which contribute to longevity, the most important is the innate bodily constitution. In this respect, savages have an advantage over civilized nations. The health of the former is more durable, and they do not experience a number of bodily and mental disorders with which the latter are molested.

A moderate temperature is more conducive to old age than great heat. The latter accelerates the natural changes of organized beings, and brings them sooner to death. Pure, dry and cold air, moderate exercise of all the bodily and mental faculties, a good physical education in general, and quietude of the mind, are all very favourable to longevity.

On the contrary, hereditary dispositions to diseases, a weakly constitution, great and sudden changes of temperature, intemperance, want of bodily exercise, noxious occupations, too great application of the mental powers, misery, unwholesome food, a want of sufficient rest, every kind of debilitating influences, disagreeable af-

fections of the mind, such as jealousy, envy, fear, grief, &c. are hurtful to health.

The influence of nature in preserving the species, and also the individuals, is great, and has been spoken of at all times, under the name of *vis plastica* or *vis medicatrix naturæ*. It is visible in the healthy and diseased state. Yet, however effectual nature, and however favourable all circumstances may be, the succession of the different ages cannot be prevented, and death is at last unavoidable. Physical education can produce only modifications, but can never annihilate the immutable laws of the Creator.

The modifications produced in the body by external circumstances, deserve next to be considered. Plants and animals which can live in various climates, are extremely modified by the influence of outward conditions. Fruit-trees which have been transplanted from the south to the north, bring forth the same kind of fruit, but of modified qualities. The grapes of France excel those of England.

LEIBNITZ has already remarked, that plants and animals show the same type of configuration, are long and slender, or short and stout, in dif-

ferent countries. We may add, that it is the same with man. In Angora, the beard of the men is modified like the hair of animals. In countries where the grass of the meadows is long, the cattle are tall, and animals in general have long extremities. Mankind shows a similar make.

The influence of physical education may be examined with respect to the body as a whole, or to the individual systems, such as the muscles, blood-vessels, bones, nerves, digestive organs, &c. It is certain and generally known, that climate and the manner of living modify the whole organization of man. Climate, in its general acceptation, designates not only temperature, but all external influences, particularly air, light, dryness and moisture, and food. A particular effect produced by a high temperature on living beings is, that they undergo their natural changes with greater celerity than in colder regions. Annual plants of the south, the aloes, for instance, when carried into northern countries, last many years.

It is quite superfluous to insist on the modifications produced in organized beings, by food, and other external circumstances. Who does not know that the constituent parts of milk, such as

butter, cheese, and whey, of the same cow, vary according to the food with which she is nourished; that the flesh of roes, hares, rabbits, fowls, &c. though each sort preserves its specific taste, is greatly modified by the food on which the animal lives?

This principle, however, is not sufficiently attended to in the physical education of children; they are commonly treated according to a general plan, while external circumstances ought to be regulated according to the individual temperament.

In this respect, a very important question may be examined, viz. How far may external circumstances contribute to the developement of individual parts of the body? It is known that different systems of the body, such as the muscles, the nerves, the digestive organs, &c. do not possess precisely equal activity in the same individual. It would be extremely interesting to ascertain, that such or such a climate, such or such food, &c. is more or less favourable to the improvement of particular systems of the body.

The same degree of excitement, whether of temperature or of food, may stimulate one sys-

tem, and weaken another. Great heat accelerates the circulation of the blood, and debilitates the digestive organs. As the manifestations of the mind depend on organization, it is conceivable why even talents and moral feelings depend on the influence of climate and nourishment. All observations of this kind have been made merely with respect to health and the intellect in general. But as medical men admit that some drugs act more on the nerves, others on the blood-vessels, others on the skin, others on the abdominal or urinary secretions, why should aliments, and other external influences, not be more or less favourable to individual parts of the body? In this way, nutrition, and the regulation of external circumstances, will increase in importance as they are discovered to contribute, not only to the development and organic constitution of the body in general, but also to the improvement of single parts.

In this respect, our knowledge is by no means satisfactory; yet every one will feel the importance of these considerations, and wish for positive observations. This interesting subject, indeed, deserves the attention, not only of medical men, but of all those who have the charge of education.

I shall now add some ideas concerning the regulation of the vegetative functions, during the time from birth to the period of full growth, or marriage.

PERIOD I.

FROM BIRTH TO THE AGE OF TWO YEARS, OR INFANCY.

IN this age, the mortality of children is the greatest; and hence the care bestowed on their treatment must be proportionate to the dangers to which they are exposed. Let us then see what is to be done, with a view to regulating external influences upon them. I have already stated, that the most important requisite to health and prosperity, is a good innate constitution. Among the external circumstances after birth, the most essential are Temperature and Food.

Temperature.

It is known that without a sufficient degree of caloric, no act of vegetation or animalization can take place; and that before birth, the child is constantly exposed to the temperature of a lukewarm

bath; was it then reasonable to think, that immediately after birth a low temperature should be most suited to its health? In new-born children, it frequently happens, that circulation in the external vessels of the skin is impeded by the influence of cold air, and that from this circumstance a kind of jaundice arises. In more advanced years, great changes of temperature are hurtful to health. In hot climates, tetanus is often the result of sudden refrigeration. We also see the natural instinct of birds leads them to cover their young with their wings. How, then, was it possible to fancy with J. J. ROUSSEAU, that new-born babes may receive benefit when exposed to cold, or when bathed in ice-cold water, or in snow? Such a treatment, it is true, has been defended by an appeal to the example of northern nations. But it has been overlooked, that in those cold countries the whole animal economy of the parents is different, and that the children participate in their bodily constitutions. The mothers in northern regions digest things which the delicate women of the south could not take without injury. It would, however, be as reasonable to feed a southern mother on fish-oil, as to bathe her tender offspring in ice-cold water. The bad effect of cold-bathing upon new-born children is now ascertained, and this nonsense has been given up.

It is not, however, my opinion that young children ought to be brought up as in a hot-house. I grant that they are often kept too warm and too much wrapped up. Man being obliged to bear various temperatures, children should be accustomed to them by degrees. But the weaker and the more delicate children are, the more care is requisite.

Food.

It is scarcely imaginable how the simple proceedings of Nature should be neglected, and fantastical dreams substituted in their place. How any one, for instance, could doubt, whether, during the first days, the milk of the mother were wholesome to the suckling, whilst calves, puppies, and the young of all quadrupeds, suck immediately after birth. Why will man alone disdain the laws of Nature, who takes so much care for the preservation of the species? How was it possible to think, that honey, syrup of rhubarb, or even wine, was more wholesome to young babes than their mother's milk, which at the beginning is thin, watery, and fit to evacuate the meconium collected in the child's intestines, and which, after a few days, becomes thicker and more nutritious? Nothing but ignorance would

endeavour to govern Nature. Thus, the mother, after having taken rest from her labours, and some restoring nourishment, should, as soon as she has got milk, give suck to her child. In cases only where she has got no milk, light artificial nourishment ought to be given, till Nature supplies a better food.

Much has been said upon the question, whether the child is better nourished by its mother's milk or by that of another nurse, or by heterogeneous substances. I think nature must decide. Experience shows, that, *cæteris paribus*, a plant succeeds better if it be not transplanted from one spot to another; and, that young trees transplanted from a fertile soil into a barren one, languish or perish; while, on the other hand, if left as they were, they grow luxuriantly. Young birds may be nourished with eggs, viz. with substances on which they lived in the embryo state: Young mammalia also may be well fed upon milk and eggs; and why should it not be the same with young children?

If the mother be healthy, and her milk nourishing, it will agree the best with the digestive powers of the child; and by giving suck, the mother will be freed from various complaints,

noticed by many medical writers as the result of neglecting the first duty of a mother. In many cases, however, it will be better for the mother, for the child, or for both, to feed the child on the milk of a nurse ; or, if this be impossible, by other alimentary substances. Many mothers of a delicate constitution are weakened and fall into consumption in consequence of giving suck. Many children also perish in such cases from want of sufficient nourishment. A mother is certainly blameable, if, from a love of dissipation and perpetual amusement, she persuades herself that she is sent into the world merely to pass through it in the most easy manner. But in the above-mentioned examples, it is most advisable to have recourse to the milk of a healthy nurse, who, as far as possible, should resemble the mother in age, temperament, and in the period of her delivery. If new-born children are given to nurses who have been delivered some time before, artificial means, such as syrup of rhubarb, or chiccory, generally become necessary, to evacuate the meconium ; or we may act on the babe by the medium of the nurse, in giving her alimentary substances that make her milk thin and clear, or even that are slightly purgative.

The milk of a wet-nurse varies according to her

age, her bodily constitution, to the food she takes, and according to her manner of living in general. She must avoid every thing which disturbs digestion, particularly strong spices, spirituous liquors, and disagreeable affections of the mind. The suckling participates in her bodily disorders. It is liable through her to vomiting, to hiccough, to pain of the belly, diarrhoea, uneasiness, to convulsive motions, and various other complaints.

Bad digestion, and all symptoms which result from it, are frequently caused by feeding the infant immediately after birth with artificial aliments, such as panada, pap, &c. It will be found that new-born children succeed best, if they live for the first three months only on the milk of the mother, or of a sound nurse. By degrees, they may be accustomed to some other food, according to their temperament and digestive powers, beginning with liquids, such as milk and sugar, broth, boiled biscuit, rice-cream, &c. and so go on to solids. The younger the child is, the less nourishment should be given at once, and the oftener repeated: older children may take more food, and at greater intervals.

The nurse's milk certainly has great influence on the developement of the suckling. Those,

however, who think that it imbibes the moral character of its nurse with her milk, are mistaken. If it were true, that a child brought up upon goat's milk was fond of jumping, that another fed with swine's milk was dirty, it would follow that adult people ought also to adopt the character of the animals on whose flesh they live. Men and women who live in the same manner, would be endowed with the same affective and intellectual faculties. Nor could it happen, that different children, nourished by the same mother, should show quite different characters, even before they had taken any heterogeneous food. Thus, the nurse's milk will contribute to the nourishment and development of the instruments of the mind; but it will not give rise to determinate qualities. Her moral character may change her milk with respect to its healthy condition, but it cannot produce talents or feelings. Finally, the mental powers of children are more or less exercised and directed by the nurse's temper and mental capacity, but they are innate.

Air.

Atmospheric air is another indispensable condition of human life, and its physical properties

and constituent parts, have an influence on all the vital functions. Its transparency is necessary to vision, or to the passage of light: its fluidity permits the free motion of the body in it. In virtue of this quality it admits also of being changed or renewed. Its elasticity in propagating its vibrations assists the sense of hearing. Its weight compresses the fluid and solid parts of our organization. Moreover, as the temperature of the atmosphere is commonly below that of our body, the air receives the superfluity of caloric. Generally, however, we are obliged to guard against the disagreeable sensations of cold caused by the too great privation of caloric.

The constituent parts of the atmosphere are extremely important to the body. Its oxygen and caloric are essential to the sustenance of life. Its azote, hydrogen, carbonic acid gas, water, electric fluid, and the various exhalations of plants and animals, have a great influence on the functions of organized bodies. Certain conditions of the atmosphere cause plants of different kinds to perish. Some winds and conditions of weather produce epidemic diseases among animals and mankind. In some persons, the digestive powers are disturbed at the approach of a storm. Persons whose limbs have been injured by wounds,

can foretell the changes of the weather by the pains they feel. Nervous and delicate constitutions perceive the slightest difference in the state of the atmosphere. Many of them know by their bodily sensations whether the wind blows from the north, east, or west.

New-born children, according to their innate temperaments, are more or less benefited or disturbed by the condition of the atmosphere. Some constitutions require a dry and others a moist air. It is, however, a general rule, that it should be pure, and not impregnated with noxious exhalations.

Light.

The influence of light is also necessary to the developement and health of organized bodies in general. It changes the colour of plants and animals, and the complexion of man. Plants kept in darkness grow pale and yellow. Worms and insects confined to dark places remain white. Those who spend their lives in their closets, have a pale and yellowish complexion. The whole organization, being deprived of light, grows weak and fat. It is affected with scurvy or putrid complaints, and the liver enlarges. Hence dark habita-

tions, narrow streets, high houses, little windows, and whatever shuts out light from dwelling-places, is unwholesome.

Light awakes us from sleep ; it excites all functions of the body, particularly those of the skin. Its sudden impression excites sternutation. Too much light produces headach, inflammation of the eyes, of the skin, of the throat, and of the brain ; hence, its regulation is of great importance.

The eyes of new-born children should not be exposed to a strong light at once, and when they begin to see, they ought to be placed so that the light is before them, since they always direct their eyes towards it, and may acquire an irregular look, the eyeballs being turned too much upwards or sideways.

Cleanliness.

The skin having a great influence on the preservation of health, by its absorption and excretion, its pores must be kept open by washing the body, and by changing the swaddling-clothes and linen whenever they are unclean. According to the condition of the skin, it may be washed with

lukewarm water only, or with water and wine, to strengthen it, or rubbed over with some oily substance if it be dry and rough.

Some parts, such as the folds of the neck, behind the ears, the interior of the legs, &c. which are liable to be inflamed, deserve particular attention. They may be washed with a solution of alum, or powdered with *pulvis lycopodii*, or be smeared with cacao-butter, oil, or any other pure greasy substance. I have already mentioned, that children should be accustomed by degrees to a lower temperature: hence the water or the bath employed as the means of cleanliness, must gradually be used colder and colder. The body, like the face, might be exposed by degrees to the atmosphere.

Sleep, Watching, Rest, and Bodily Exercise.

Before birth, children seem to sleep almost continually. After birth, the younger the infant, the more sleep it requires. Children then should never be awakened, and be allowed to sleep as long as they please. It is, however, wrong to employ soporiferous means to produce sleep. On the other hand, they may be soon accustomed to

awake and to fall asleep at a certain hour, and this habit is useful in various respects.

The free exercise of their limbs is very advantageous to them. No part of the body ought to be pressed. It was an absurd custom to tie the tender creatures, and to impede all their motions. It is particularly necessary to attend to the head, and not to let it fall backward, since the nerves of the spinal cord may suffer from pressure, on account of the cartilaginous state of the vertebral processes.

We ought not to be uneasy when children cry a little. By crying, the lungs are distended and strengthened, the eyes and nostrils are cleaned, and the circulation of the blood is promoted. It is imprudent to lift up children by one part only, such as by one hand or one arm, luxations being easily the result of this practice. It is also wrong to place delicate and fat children too early on their legs, since curvations of the spine and hip bones may be thereby produced. Moreover, the thorax and shoulders are often injured by leading-strings, which, in consequence, ought to be abolished. It is true, that many children are strong enough to resist, but delicate ones must frequently suffer by them. Too violent shaking

may injure the stomach and brain, and produce vomiting, principally at the moment when the stomach is full. Bodily exercise is of great influence, but it is to be directed with caution.

PERIOD II.

FROM THE AGE OF TWO YEARS TO THAT OF SEVEN, OR CHILDHOOD.

BEFORE I consider the particularities of this period, it will be interesting to advert to a few circumstances with respect to dentition. At first, the natural food of children is liquid; but about the seventh month, instruments which are fit to assist the digestion of solid aliments, viz. the teeth, appear. The developement of these organs is often the cause of various complaints. The saliva is generally secreted copiously, frequent sneezing occurs, the gums grow red and hot, sometimes they are swollen, one or both cheeks are red; the child carries his hands, and every thing he holds, into his mouth, and presses the gums against it. At the end, white spots are seen where the teeth appear. Commonly the two middle incisors of the lower jaw first cut through the substance of the gums. A little while after,

the corresponding incisory teeth of the upper jaw show themselves, then the lateral incisors, the eye-teeth, and the lateral grinders. When the small molar teeth have come through at the age of about two years, the first dentition is complete, and the life of the child, which before was precarious, is then more secure; for it is ascertained that a third part of children dies before the age of twenty-four months.

The growth of teeth, though a natural operation, causes various disorders in the vital functions of children. Diarrhoeas and convulsions are the most fatal accidents attending difficult dentition. The state of the jaws alone, or, by sympathy of several other parts, sometimes of the whole body, is inflammatory; Hence the treatment of such children must be conformable. As their constitutions, however, are extremely modified, a physician ought to be intrusted with the particular care of them. The general rule is, that every kind of stimulus ought to be avoided. Tepid bathing is an excellent antiphlogistic.

It may be observed in general, that in infancy the vital motions tend particularly toward the head, and that, therefore, this part is the principal seat of the afflictions peculiar to this age.

In order to favour the cutting through of the teeth, the gums may be rubbed with sugar or bits of althea-root, moistened with honey or syrup, and kept between the jaws. The nurse may also introduce her little finger, moistened with honey, between the gums of the child, to soften them, and to relieve the pains of the young creature. Sometimes little incisions are made into the gums with evident advantage. The excretions of the skin and bowels must be kept free.

To the twenty teeth of the first dentition two new grinders in each jaw are added at about the end of the fourth year. They differ from those that preceded them in this, that they are destined to remain throughout life, whilst the primitive or milk-teeth are lost at seven years of age, in the same order in which they appeared, and are replaced by new teeth, better formed, and provided with longer and more perfect roots. Towards the ninth year two new large grinders come forth beyond the others. There are then twenty-eight teeth. Between eighteen and thirty, or sometimes still later, the *dentes sapientiæ*, two in each jaw, complete the second dentition.

Dentition, like all other acts of the living economy, is subject to endless variations. There are

instances of children that have come into the world with one or two incisors, and there are often supernumerary teeth. It is difficult to say why the primitive teeth are detached and replaced by others, which have remained so long buried within the alveolar processes. Teeth of a third set have been known to be cut in very old people.

Generally speaking, teeth are not taken all the care of which their importance demands. They ought at least to be kept clean. Those who neglect this duty, offend against the first requisition of nature; and if they are punished by tooth-ache, they receive only their desert. The condition of the teeth certainly depends on the whole constitution of the body; and in many cases, the advice of a good dentist, who understands not only the operative part of his art, but also the animal economy, is to be recommended.

The teeth are in close relation with nourishment, and this deserves particular attention. The necessity of taking nutritive substances is generally known and indicated by hunger and thirst.

Nature, which has assigned to different animals their different aliments, has, in this respect, al-

lowed to man the greatest variety. He is almost omnivorous, and he alone understands the art of cookery, by which he facilitates digestion. Yet nourishment must be modified in quantity and quality according to age, to the bodily constitution, to climate, to season, and to the manner of living.

The influence of different kinds of food on the whole constitution is evident, from the modified flesh of animals of the same species, fed on various aliments.

In children, the functions of nutrition are quicker; they die sooner of inanition than adult persons; they require more frequent feeding, and a larger quantity of food, as they not only change the matter of their body, but increase also.

As children grow stronger, they will digest substances of a heterogeneous and more solid nature. In general, the more simple and plain, the better are the aliments; and every food which digests is wholesome. It is, however, known, that lymphatic constitutions require nutritive and stimulating substances; that nervous temperaments suffer from stimuli, and stand in need of light and simple aliments; and that weak bowels

do not bear vegetables, fruit, and paste, these aliments giving rise to worms and scrofulous diseases. Such bowels then must be strengthened by animal food, steel-water, some wine and bitters.

In cold climates animal food is necessary to man; he grows pale and languishing on vegetables. In hot countries, on the contrary, fruit and vegetables nourish sufficiently, their nature being quite different from that of plants in northern regions. This is evident, since the spices we take to assist digestion, belong to the vegetables which grow in southern climates. A cold dry air excites the appetite, while a hot and moist atmosphere weakens the digestive organs.

The alvine and cutaneous excretions are in intimate connection with nutrition. Noxious particles, when they remain in the intestines, are absorbed and brought into the circulation. The bowels being constipated, the bloodvessels are compressed, the circulation is impeded, and piles are produced. The blood is carried to the brain, and causes head-ache. Thus, the excretions must be taken into consideration and regulated. They vary in quantity and quality according to age, temperament, nutrition, weather and season. Perspiration is more considerable in youth than in old age,

more in hot than in cold weather, more irritable than in inert temperaments. Children suffer from being kept too warm. Yet too sudden and too great changes of temperature produce in them, as well as in adult persons, catarrhal affections, coughing, inflammation, diarrhoeas, &c.

The skin ought to be kept clean, exposed to the air, and thus rendered less sensible to external impressions. With respect to clothing, the general rule is, that no part of the body ought to be pressed. Weak organs may be supported, and the whole body defended against cold, but all the movements of the body ought to be free and easy. It is a false taste to hurt the health with a view to increase beauty.

A sedentary life is adverse to health in general, particularly to that of children. They require more bodily exercise, and more sleep than adults.

During childhood, as well as in infancy, the regulation of the vegetative functions is the most important point of education. A good and healthy organization is the basis of all employment and of all enjoyment. Many parents, however, are anxious to cultivate the mind at the expense of the body. They think that they cannot instruct

their offspring early enough to read and to write, whilst their bodily constitution and health are overlooked. Children are shut up, forced to sit quiet, and to breathe a confined air. This error is the greater, the more delicate the children are, and the more premature their mental powers. The bodily powers of such children are sooner exhausted, their brain is liable to inflammation and serous effusion; and a premature death is frequently the consequence of such a violation of nature. It is indeed to be lamented, that the influence of the physical on the moral part of man is not sufficiently understood. There are parents who will pay masters very dearly, in hope of giving excellency to their children, but who will hesitate to spend the tenth part to procure them bodily health. They, by an absurd infatuation, take their own constitutions as a measure of those of their children, and because they themselves in advanced life can support confinement and intense application with little injury to health, they conclude that their young and delicate children can do the same. Such notions are altogether erroneous. The advantages of a sound body are incalculable for the individuals themselves, their friends, and their posterity. Body and mind ought to be cultivated in harmony, and neither of them at the expense of the other. Health should

be the basis, and instruction the ornament of education. The developement of the body will assist the manifestations of the mind, and a good moral education will contribute to bodily health. The organs of the mental operations, when they are too soon and too much exercised, suffer and become unfit for their functions. This explains the reason why young geniuses often descend at a later age into the class of common men. Indeed, experience shows, that among children of almost equal dispositions, those who are brought up without particular care, and begin to read and to write, when their bodily constitution has acquired some solidity, soon overtake those who are dragged early to their spelling-books. No school education, strictly speaking, ought to begin before seven years of age. We shall, however, see in the following chapter, on the laws of exercise, that many ideas and notions may be communicated to children by other means than books, as it is done in infant schools. When education shall become practical and applicable to the future destination of individuals, children will be less plagued with nothings, but they will be made answerable not only for their natural gifts, but also for the preservation and cultivation of their bodily constitution, since vigour in it is indispensable to enjoyment and usefulness. They will be made acquainted

with the natural laws of nutrition, and with their influence on health. This knowledge will be of greater use than to forbid eating meat on certain days. Teachers, indeed, ought to know, that nothing is unclean or an abomination in itself, but becomes so by being ill used. Man must eat and drink to live, but he ought to avoid all unwholesome food, and whatever disturbs his health.

The influence of the laws of the vegetative functions is so great, that those who direct mankind, ought to be permitted to regulate them in many respects. The Mosaic law may serve as a fine specimen. All ancient legislators paid great attention to these laws, as well as to those of hereditary descent.

The submission of man to the laws of the vegetative functions is necessary during his whole life, but particularly from birth to the age of complete developement, since the time of growth is preparatory for the rest of life.

An additional observation concerning the vegetative functions is, that they, like all others, admit of great modifications, nay, even of idiosyncrasies. Some persons succeed under all circumstances: they digest whatever they eat; others suffer

from particular aliments, such as mutton, pigeon, veal, cauliflower, &c. These, and all other particularities can only be observed, but can never be explained. In regard to them, every one must be his own physician. DEMOSTHENES and HALLER were kept in a state of regular excitement by drinking nothing but water. Coffee was the favourite stimulus of VOLTAIRE, and tea that of Dr. JOHNSON. Sir ISAAC NEWTON lived upon vegetables when he was employed in composing his famous treatise on Optics. HOBBS sat in his study, enveloped in the smoke of tobacco, &c.

During the age of preparation, that is, from birth to the state of full growth, a third kind of laws is to be kept in view, and these shall be considered in the following pages.

CHAPTER III.

ON THE LAWS OF EXERCISE.

THESE laws embrace what is called Education in a more limited sense, but in this respect many errors are caused by the true meaning of the word *Exercise* not being sufficiently understood. I em-

ploy this expression as synonymous with putting into action, and distinguish Exercise from Habit; the latter being the result of the former.

Habit.

Habit has two significations: it sometimes indicates the result of diminished activity, and at other times a greater facility of acting. A power being too active, becomes fatigued, diminishes, and is finally exhausted. Moreover, all natural powers become accustomed to external impressions, and the former become the less affected the longer the latter are applied. The mimosa sensitive, when shaken for a certain time, ceases to fold its leaves. In the same way, each sort of impression on the organization loses its effect by frequent repetition. Even noxious impressions, when repeated, are less felt than they were at first. In this sense MITHRIDATES accustomed his stomach and bowels to poisonous substances. The attendants and nurses of patients become in a certain degree insensible to contagious diseases in hospitals. The mind itself shows less energy at each repetition of the same function. It becomes accustomed even to misfortune and painful situations.

Organized beings adapt themselves in a surprising degree to external impressions, and a change of place and various circumstances is frequently less advantageous than might have been expected. Prisoners, who have been confined for many years to dungeons, or unwholesome habitations, fall sick when they obtain their liberty. Many morbid, but accustomed affections, such as old sores and exudations, &c. are to be removed with the greatest precaution, and sometimes to be left untouched. Body and mind successively take a turn which can be changed solely by degrees.

All changes which nature produces are successive, and art ought to imitate her proceedings. It is the same in dietetic rules, and in every manner of feeling and thinking. Drunkards cannot leave off their bad habits suddenly without injuring their health. Those who are near starving from inanition, will perish if too much nourishment be given; and too much light dazzles those who have lived long in darkness. The bad effects of great and sudden changes of temperature on inanimate bodies, such as glass, or on plants, animals, and man, are generally known. Those who are accustomed to certain mental occupations, feel great reluctance to give them up. In the same

way, great and sudden changes of political, moral, and religious opinions, are not borne with indifference. Habit is a second nature, physically and morally speaking.

The living generation, if not prepared for it, generally rejects every reform. It is only in process of time that the adherents to any new doctrine become numerous; and any doctrine, though false, when once admitted, will be replaced by another and a better only by degrees. Yet it is natural that the more agreeable a doctrine is, the sooner it will gain ground, and that a precept which commands resignation will be submitted to, in proportion to the reward it promises. Christianity assigns eternal happiness as the reward for temporal conflicts; and it was adopted by fishermen and the poor sooner than by the rich.

The law of modifying mankind, or of producing changes is seldom understood by reformers. They are commonly too hasty; though, at all times, experience has shewn the danger and harm of such a proceeding. When changes are to be made, let them be gradual; the greater the alterations you wish for are, the slower must be your method of proceeding; keeping, however,

constantly the aim in view. The precipitancy of common reformers can be excused only by their ignorance of human nature, and by their erroneous opinion, that it is sufficient to point out errors, and to propose principles, in order to perfect man, without considering that he must by degrees be prepared for, and accustomed to them.

The facility of accommodating man to new impressions greatly depends on age; it succeeds best during the period of growth, whilst in latter years we are less susceptible of changes. It is therefore not astonishing, that all new doctrines have been received and propagated by youth and new generations.

The law of accommodation, however great, never annihilates the general laws of life. It is even subordinate to them, and cannot prevent the successive changes of age. Again, every individual being born with a different constitution, and with different dispositions, is not equally capable of accommodating himself to circumstances, and hence each will present some modification, though the external influences are the same. This is the case in the automatic and animal functions. Notwithstanding these restrictions, the law of accom-

modation is incalculably great in the education both of individuals and of nations.

The second meaning of Habit is an increased facility of acting in a certain manner. In this acceptation of the word, it is still more interesting to education than in the former, and deserves a detailed elucidation.

Exercise.

I have already mentioned that I employ the word exercise as synonymous with putting into action. Now the first law of this kind is, that exercise strengthens powers. This principle is quite general throughout nature, and extends even to inanimate bodies. Musical instruments being played on by masters in the art, improve. The power of a magnet to support weight may be increased, by gradually appending to it more. Every power, both in automatic and animal life, may be exercised, and thereby gains in activity. There is something analogous even in the diseased state. Each organic part, having once been affected by any disorder, is liable to relapses; in the same way as, according to the first

meaning of habit, by repetition and continuation many diseases are exhausted.

The digestive organs may not only be accustomed to various aliments, but they become also more active by being satisfied. In persons who spit out the saliva, the glands secrete more abundantly. All muscles which are exercised increase in strength. Smiths, and those who use their arms, acquire more power than those who seldom employ them. Bodily exercise in general strengthens; and a sedentary life weakens the constitution.

The influence of exercise on the functions of the five senses, is generally known and admitted. The sense of feeling often acquires a very high degree of perfection in persons who are blind. In my work on Phrenology, speaking of the Generalities of the external senses, I have quoted many examples which prove, that they become more active by practice.

It is the same with the internal faculties manifested by means of the different parts of the brain. Each mental power, if it be sufficiently cultivated, grows more energetic, whilst, if neglected, it shows less activity.

In this chapter on the Laws of Exercise, I take for granted, that all dispositions are innate and discovered. I refer for the details of this important proposition to my work on Phrenology. Hitherto philosophers have admitted a few general powers, and have derived from them all particular manifestations. The greater number of them consider the intellect as the cause of the feelings. Accordingly, they confine education to the Understanding, and do not think of cultivating the Feelings themselves. This, however, is a great error, and the first thing to be done is to specify the primitive powers of the Mind; and then, as they exist independently of each other, every one must be exercised for itself. The legs or arms will not be strengthened by reading treatises on muscular motion. The digestive organs will not act with more energy in those who know all the theories which have prevailed on digestion, and who are even able to explain the causes of hunger and thirst. Let such persons have but little to eat and to drink, and give to others who have never heard of any theory of alimentation, wholesome food in abundant quantity, and every intelligent reader will perceive whose appetite and digestive functions will be exercised to the best advantage.

Let any one study the principles of optics merely in books and in descriptions; let him learn by heart all the theories of colours, but let him never see any colour, nor feel their harmony. He may, like a blind man, recollect all the expressions used in painting, but without practical instruction his faculty of colouring will not improve.

Who would pretend to cultivate the musical talent only by reading discourses about the principles of melody and harmony? Is it not necessary for this purpose to perform tunes, or to hear them performed by others, either in singing or in playing on a musical instrument?

It is the same with all intellectual faculties. Each must be exercised or put into action for itself. Thus, to cultivate the power of Numeration, the numbers must be shown in real objects. To exercise the power of Locality, it is not enough to know the names of each town, river, sea, &c. but their respective situations must be acquired. Some children easily recollect names and geographical descriptions by heart, but feel great difficulty in learning local situations; while others present to themselves, in their own minds, an exact image of localities the names of which they have forgotten. When children are obliged to

trace maps, it is not always those who know the localities best that have the greatest power of tracing them on paper. The fundamental faculties must be separated in every study. In geography, for instance, a perfect knowledge requires the exercise of Individuality, of Form, Size, Locality, and Language. In order to draw maps, Constructiveness is required in addition. The latter power will be assisted by Order and Numeration.

The intellectual faculties of man have improved less by education than they might have done, in consequence of two reasons, first, of the primitive powers of the understanding not being known; and second, of the difference between sensations and perceptions on the one hand, and the artificial signs, either sounds or figures, which express them, on the other, not being attended to.

To proceed as if artificial signs could produce sensations and perceptions, while they can only call those ideas into recollection which have pre-existed in the mind, does incalculable harm. It is to be admitted as a general principle, in communicating every kind of positive knowledge of the external world, that, first, sensations and perceptions must be excited, and these then de-

noted by particular signs. In that way we shall avoid the great mistake to which we are accustomed from infancy, viz. of pronouncing words without knowing their meaning.

The vocal or written signs are to be used only as means of communication, of recollection and tradition; but they cannot be considered as the cause of any idea or sensation. On the other hand, each intellectual faculty must be exercised by practical application, in the same way as the sense of hearing is exercised by hearing, that of smelling by smelling, that of sight by seeing.

With respect to the Feelings, education is still more defective. It is commonly believed that it is more difficult to cultivate the propensities and sentiments than the intellectual powers. It is even stated, that the feelings cannot be taught. This proposition, however, is not clearly stated. The feelings cannot be taught, if by this proposition we mean, that they may be given by education; in this sense also understanding cannot be communicated. Both intellect and feelings are innate or given by the Creator, but the latter may be exercised in the same manner as the intellect, not by the action of the faculty of language, or by learning signs, or by exercising the verbal me-

mory, but by putting the feelings themselves into action. I even think that it is much easier to exercise the feelings than the intellectual powers.

It cannot be too frequently repeated, that the Feelings do not result from intellect, any more than intellect is the result of the feelings. No one is benevolent, just, timid, courageous, haughty, or affectionate, in proportion to his understanding, nor has he penetration on account of his feelings. Moreover, each affective, as well as each intellectual faculty, must, and may be exercised for itself. Man learns to be courageous, circumspect, ambitious, just, or benevolent, as he learns to sing, to calculate, to measure, to speak, and to reflect. When often exposed to danger, he learns to meet death without fear. By habit he becomes indifferent to destruction. The heart, as the Chinese proverb states, goes farther than understanding.

Thus, bring men into favourable situations, calculated to call forth their feelings, and these will be strengthened. In order to cultivate benevolence, one should not frequent only the society of rich and opulent persons, and learn by heart descriptions of charity; he must experience misery himself and contemplate the painful situa-

tions of others. There are more poor willing to give charity from their necessity, than rich from their superfluity. If all our whims and fancies have generally been satisfied, the feelings of justice and benevolence towards others are less excited, than if our wishes have been contradicted and reformed. For the same reason moral feelings will not improve by frequenting places of debauchery.

The principle in question explains the ancient proverb ; *verba movent, exempla trahunt*, and also the great influence of bad or good company. Society, however, cannot be, as it is often considered, the cause of any faculty ; it presents only an opportunity to the innate powers to act, or excites them to do so.

The knowledge of the means of exciting the powers is very important, but not better understood than the fundamental powers themselves. It is time to abandon the immense error, that words and precepts are sufficient to call internal feelings and intellectual faculties into active exercise. Gospel-preaching is infinite, but many of those who deliver exquisite sermons are too often obliged to add : Do what I say, and not what I do. Now, if they themselves show no faith by

their works, how can they expect others to do so? Let education be practical, and the means of excitement adequate to the innate dispositions. Bold children will reap advantage from being brought up alone, but timid ones must be early accustomed to the society of strangers. Obstinacy will increase by unseasonable vexations, while just and quiet resistance or mild treatment may suppress it. The feelings are rather moved by a dramatic representation than by a monotonous sermon. The sight of a person wounded, or in danger, makes a greater impression on the mind, than reading that thousands have been killed in a battle. Natural language, in general, has more effect on the feelings than artificial signs. We are, for instance, more likely to smile or laugh on looking at a gay face, than on hearing the word gaiety mentioned.

The effect of external impressions on internal faculties is proportionate to the assistance which the external senses give to the internal faculties. I refer particularly to what I said of the mediate functions of the external senses, in my work on Phrenology. In that way, the influence of religious ceremonies on common people, is easily explained, and ought not to be overlooked. Music, and representations of objects and facts in paintings and sculpture, may excite various kinds of

feelings, the inferior as well as the superior.—It is true, that these means may be and have been abused; but I think it wrong on that account to reject them altogether. Let the impressions on the senses be adapted to the feelings we wish to excite, and these will be exercised. Church-music certainly should be different from that of the ball-room, but music itself ought not, therefore, to be considered as useless in the inspiring religious feelings. By means of music, the soldier may be incited to fight, and the Christian to adore his CREATOR. The great point is, not to confound the means with the aim, and not to consider the first as the second. Religious ceremonies are nothing but means to become morally good; and if they do not tend to that purpose, they lead us into error. The practice of them will not improve the moral conduct any more than learning the commandments by heart will do. It is also true that the effect of music is different in different individuals; but it is a great instance of ignorant bigotry and intolerance in persons to exclaim against its use in religion, because they themselves are unfortunately insensible to its charms.

I shall add a few remarks on the artificial signs: they are oral, viz. pronounced, or written

and printed. We commence with learning the oral or vocal signs. Their number increases in proportion to the activity of the innate faculties of the body and mind, but children ought not to be taught to pronounce any word, without learning at the same time to understand it.

As every family has not the means of giving sufficient education to their children at home, they send them to schools or colleges, to be instructed. Public institutions, in consequence, ought to be established, with a view to give notions first, and signs afterwards, in proportion to the notions acquired. It is evident, that the objects to be taught must vary, according to the situations of the scholars, in future life, whether they be destined for agriculture, commerce, or any of the learned professions. Articles which compose the first necessities of life, the most common objects and events, Forms, Measures, Weights, Colours, Coins used in the country, the general division of beings into minerals, vegetables, and animals, the great and common phenomena of nature, &c. may be taught every where. Those notions which are particularly interesting to country people, such as the rearing of cattle, or cultivating fruit-trees and other plants, &c. may be given where necessary. Every kind of

information given should be practical and useful. Whatever is spoken of, should be shown in nature, since it is useless to speak of things which children have neither seen, heard, felt, tasted, nor smelt. They cannot know any more of them than those who are born blind do of colours. The feelings also ought to be exercised as far as they are necessary; but it is not enough to *speak* of Charity to teach it; teachers must excite that feeling by their own example; and children must be accustomed to practise that virtue.

In the practical way, an immense number of useful notions might be given to children in a short space of time. Their intellect shows a great tendency to acquire positive knowledge, while teachers, in direct opposition to nature, very absurdly torment them with words without meaning, or with things they cannot understand.

As in teaching languages or vocal signs, it is essential to combine notions with words, and to show that the latter are merely signs, so, in teaching words, the whole grammar of the mother-language might be taught. Children will understand the meaning of substantives, or that each being has a name as well as each substance,

each form, dimension, colour, &c. They may learn, at the same time, the qualities of objects, and words which express them, or the adjectives. Their attention may also be directed to the different degrees of the adjectives. In proportion as they become acquainted with phenomena, or facts, the verbs may be explained. The different kinds of notions, too, may be pointed out, and children may thus become acquainted with the primitive powers of man, without any peculiar study.

Those who are advanced in the acquirement of notions, and of words or spoken signs, may begin to learn written and printed ones. They will then compare the latter signs with the former, or with the sounds of which they have already acquired some knowledge. Among the printed and written signs, first, are to be learned those which are employed to express constantly the same sounds; in the German language, for instance, *a, o, u, b, d, g, l, m, n, p, s, w, &c.*; then the signs which are different, but express the same sounds; as, in the German, *x* and *eks*;—*f* and *v*;—*i* and *y*;—*z* and *tz*:—finally, the signs which designate different sounds, such as in the German *c, e, h, &c.* When the printed and written signs of single sounds are

known, then those of compound ones may next be taught.

To assist the power of language, the faculties of Individuality and Form are usually employed at the same time. The figures of animals are marked under the letters of the alphabet; an Ape, for instance, is placed under A; a Bat under B; a Cat under C, &c.; yet no animal should be named that is not perfectly known to the children who learn the signs. It would be desirable, however, to exhibit the animal itself, where it is not familiarly known.

In this proceeding the fundamental powers of language and configuration are obliged to learn each two impressions: two forms and two names, for instance, A and Ape, C and Cat, &c. I therefore would advise to teach only the written or printed signs, without bringing them in connection with objects; but I would, at the same time, when they learn the printed signs, exercise their fingers in copying the letters of the signs, or what is the same thing, in writing them in sand, as is the practice in the schools of mutual instruction. The advantage of the other method is supported on the effect of association. But those who are taught in this way, and have the power of confi-

guration very active, may be impeded in reading, because they attach at each letter the object they have learnt in its connection; and in order to read fluently, they must unlearn what they were obliged to learn at the beginning.

It is clear that the printed and written signs or letters in any language, ought to be formed in the same manner. If both sorts of signs are different, as in the German language, a useless difficulty is created.

The printed and written signs should be taught in the same order as the sounds are communicated, and a sign should never be taught without indicating the idea that is expressed by it. We ought to begin with single sounds and single letters; then to go to monosyllables, and by degrees to polysyllables; and these should be pronounced and compared with the printed and written signs. Ale, Ape, Bed, Bank, Cat, Cold, &c.—Apple, Bacon, Body, Bitter, &c.—Appetite, Candle-stick, Candle-holder, &c.

As we are accustomed from infancy to connect sounds with the printed and written characters which represent them, we never see the latter without repeating at the same time the former.

Did we never learn sounds, without acquiring at the same time a positive knowledge of the things they express, we should always think of the related notions when we heard or saw the signs, and then learning would be much more agreeable, easy, and profitable.

The same proceeding is necessary with respect to both the intellectual and affective faculties. As we ought to perceive the external objects indicated, before we learn the signs of them, either vocal, printed or written, so we ought to experience the feelings first, before we learn the words by which they are expressed. Hunger and Thirst, Warmth, Cold, Anger, Fear, &c. must be felt before their signs can be fully understood. If education be conducted in this way, moral and religious principles will produce more effect on mankind than they have done hitherto. Then the moral faculties will be called into action, and our efforts to cultivate the mind will not be limited to the power of language only, viz. to that faculty which learns artificial signs.

Ignorance of the fundamental powers of the mind, and of the means of exercising them, may be observed in all the institutions of society. Whole universities are conducted according to

erroneous suppositions. All teachers agree that the reasoning power ought to be exercised in every individual; but what shall be done to accomplish that end? Perhaps we see one man of great depth of mind who is eminent as a mathematician: the inference is immediately drawn, that every child ought to study mathematics, in order to acquire great reflecting powers; and not even the theologist is to be excepted, as if mathematical and moral reasoning were founded on the same principles.

Another person also endowed with great reasoning powers is perhaps a great philologist, and particularly an excellent Greek and Latin scholar: therefore, every one is compelled to learn Latin and Greek, with the view of giving him a powerful mind, as if learning words and phrases were the same as acquiring sensations and perceptions of all kinds, and reasoning on them. Happily the time of sophistry is past, and positive knowledge is now esteemed. Experience shows, that philology and mathematics do not improve arts and sciences, nor the moral character of man.

It is replied, that the great mathematician and the great linguist, excel by their philosophical minds. This is certain; but they did not become

good reasoners, one by studying mathematics, and the other by learning Latin and Greek. There are great philosophers who cannot become great mathematicians, nor great linguists. The reflective powers of man are fundamental, and may be employed in prosecuting any branch of knowledge, in the study of natural history, zoology, geology, chemistry, phrenology, &c.; and whoever excels in general reasoning, must possess them in a higher degree; but they are by no means the exclusive attribute of mathematicians or philologists.

In the same way, as each faculty exists in itself, and may be combined with others, so each may be exercised alone or in connection with others. We may exercise the faculty of Form, Size, or any other, without learning signs to denote our ideas; and we may learn signs by heart, without understanding their significations; or Language may also be exercised at the same time with other faculties. Yet it is useful to put into simultaneous, or closely successive action, all the faculties which have a mutual influence on each other. In this way they excite each other mutually. This rule explains the whole doctrine of Mnemonics; that is, the activity of one power excites that of one or several others. In the next chapter, this

proposition will be more fully detailed. Here, my principal object is to fix the attention of teachers upon the great fault of confounding together signs and ideas, or of thinking that mere words can produce notions.

School education begins with teaching printed and written signs, without explaining their significations, and even the instruction we commonly get in colleges, is more a communication of signs than ideas. Youth are admired and rewarded in proportion as they know signs. How glorious is it for a boy to know how to communicate the same idea in Greek, Latin, perhaps in Hebrew, or in many modern languages !

It is, however, certain that, generally speaking, the study of the dead languages is extremely tedious for the greater number of pupils. I am convinced, that thereby many children become unwilling to learn things to which they would have attended with pleasure, had they been taught them in their own language in a practical way. Many others are drilled by indefatigable pains to become classical scholars, and nevertheless fail to distinguish themselves. Some good Latin and Greek scholars, when they come to practical business, are left behind by fellow students, who at

school were undervalued. The quantity of Latin words crammed into the heads of the students, does not give them the primitive power of reflection, nor does it serve to cultivate attention. On the contrary, that constrained method of studying, renders their conceptions slow and indolent.

The spirit of the ancient languages, however, is declared to be superior to that of the modern. I allow this to be the case, but I do not find that the English style is improved by learning Greek. It is known, that literal translations are miserably bad, and yet young scholars are taught to translate, word for word, faithful to their dictionaries. Hence those who do not make a peculiar study of their own language, will not improve in it by learning, in this manner, Greek and Latin. Is it not a pity to hear, what I have been told by the managers of one of the first institutions of Ireland, that it was easier to find ten teachers for Latin and Greek, than one for the English language, though they proposed double the salary to the latter? Who can assure us that the Greek orators acquired their superiority by their acquaintance with foreign languages; or is it not obvious, on the other hand, that they learned ideas and expressed them in their mother tongue?

It is farther said, that it is interesting to know Latin and Greek, in order to understand the etymology of modern languages. This is true, but, with this view, the English ought to study also the German, Dutch, French and Danish, since their language is composed of words borrowed from all these nations.

After all, I am persuaded that the advantage does not repay the trouble of prosecuting such studies, and that they occasion an enormous waste of time and labour. I had rather learn ten ideas in a given time, than ten different signs which express one and the same idea. We should never sacrifice positive knowledge and reflection to the acquisition of a variety of signs. We should begin to acquire notions and that language which is the most necessary for us to converse in. When I was examined, in order to my becoming a licentiate of the college of physicians of London, it would have been more suitable to have inquired whether I spoke the English language sufficiently, than whether I understood the Latin, the English being indispensable to the practice of medicine in and about London, whilst no physician examines his patients in Latin, any more than a barrister defends his clients, or a preacher exhorts his congregation in that language.

It is said, that a man who knows Latin, has received a liberal education; yet it is a lamentable thing that we should pretend to judge of a person's useful attainments by his knowledge of ancient languages. I wish that the medical profession may be cultivated by men of superior talents, but I hope that a knowledge of Latin and Greek will not continue to be the touchstone of deciding who is, or is not, fit for practising this difficult and important art. Few surgeons and physicians, who are good classical scholars, will, from that circumstance, equal JOHN HUNTER in useful knowledge, and in improving the healing art; and yet he was not prepared by the study of ancient languages for the excellence he attained. A similar remark might be made with respect to Shakspeare.

We seldom learn to speak Latin and Greek, or we soon lose the habit of doing so. Thus, we learn these languages in order to understand the contents of ancient books. This is well, but then we ought, for the same reason, to study all modern languages; at least, to act fully up to this principle, medical men ought to take that trouble, since, beyond doubt, all branches of natural history, anatomy, physiology, and pathology, are more advanced now than they were at the time of

the Greeks and Romans; and, of course, more knowledge is to be obtained on those subjects from publications in the modern languages of Europe, than in the languages of Greece and Rome. Formerly, when scientific books of all nations were published in Latin, a knowledge of it was necessary; but since the works of every nation appear in the mother tongue, the same degree of importance can no longer be attached to it. If we are contented with extracts and translations of modern works, why should we not be the same with respect to the ancient? Moreover, the greater number of professional men, who are much occupied in practical life, have scarcely time to read what is written in their own language. Their knowledge of Latin and Greek, therefore, is quite useless to them and to the art.

I think, that every one who has the natural talent and abundance of leisure, may be allowed to study the ancient languages, as well as the modern, if so inclined; but that a knowledge of them ought not to be required as indispensable from every student; and it seems to me particularly unwise to begin our college education with them.

It is replied, that childhood is the most fit period for learning languages,—that children must

be trained up to the tedious study of ancient tongues, because, at a later period, they would not submit to the same trouble. The second part of the proposition is supported by no authority, except that of the prevailing opinion, that the study of Latin is a necessary accomplishment; it falls to the ground as soon as we feel its uselessness. It is undoubtedly true, that youth is the fittest period for learning languages, but let us learn those first which are the most important to our future life. Now, the modern languages, appear to me to be the most useful. Above all stands our mother tongue; we ought, therefore, to begin with it. The parts of speech are the same in all languages, and may be learnt in the modern as well as in the ancient. I leave this subject to the consideration of all those who interfere with the direction of academic studies. Some may think that I have entered into too many details, but the importance and great influence of this matter will plead my excuse.

The next principle of exercise is, that the primitive powers are not to be confounded with their application; each power being always the same, but its applications and modifications infinite, according to age and external circumstances. Inattention to this difference, produces more bad

effects than many persons suppose. They complain, for instance, of the vanity of adult persons, while they continue to nourish this feeling in every child they meet with. He who knows that the Love of Approbation is a fundamental feeling; that it exists in different degrees of strength in different individuals, and that exercise increases its activity, will not excite it too much in infancy, for fear that, in later life, it should produce abuses. He will perceive, that flattery of every kind excites this sentiment; that praising a child for his figure, his hair, his voice, his clothes, his manner of dancing, &c. will put into action, and increase his Love of Approbation, and prepare for him a source of misfortune. Irascible children should not be permitted, and still less encouraged, to beat their playthings, against which they hurt themselves. As equity was a principal object of the Areopagus of Athens, that virtue was considered as indispensable in the members in all situations. He who killed a bird that looked for shelter in his house could not become a member; and a member who played on a word, was degraded, because such a practice might do harm to truth. How inferior, nay puerile, is the behaviour of some modern legislators! Those who are faithful in little things, says Christ, will be so in great. Thus particular vigilance ought at all

times to be observed not to cultivate to excess the propensities and sentiments of children, which may in after life render them unhappy or impede their moral conduct. On the other hand, they are wrong who neglect to cultivate the feeling of veneration, or the faculties of the fine arts, because disorders may and often do result from them. This also happens with acquisitiveness, and with every fundamental power, each of which, however, is given to a certain purpose. In admitting that every one is answerable for the talents he has received, it is evidently our duty to cultivate the fine arts, as far as they are in harmony with all other faculties. Superstition undoubtedly degrades a reasonable being, but the human character is ennobled and the charms of society increased by respectfulness. There can be no doubt that in attending to the difference between primitive powers and their application, between their legitimate actions and misapplications or disorders, many errors hitherto committed in education will be avoided.

The third principle of exercise is, that the order of instruction ought to follow the order of nature, in bringing the faculties into activity. Children acquire notions before they make themselves acquainted with signs to indicate them.

They know the objects themselves sooner than their qualities and mutual relations; they know the qualities of those objects sooner than the modes of their actions. Accordingly, their language begins with nouns, and verbs in the infinitive mode. By degrees, they learn signs to indicate their acquired notions of other kinds. Their language, then, evidently shows, that their faculties do not appear simultaneously. It is, indeed, an important point in education, to know that the faculties of the mind begin to act successively, viz. in proportion as the organs on which their manifestations depend, are developed. Hence, they ought to be exercised in the same order; and the knowledge of the periods of development of the respective organs, is as necessary as a knowledge of the functions of the primitive faculties; because it is certain that no faculty can be exercised without the assistance of its organ. This principle is general in organic and animal life.

It may be here considered, that education, as far as exercise goes, begins earlier in life than is commonly believed. The vegetative functions, the hours of sleep, of appetite, of the urinary and alvine excretions, may be soon regulated. Children are easily accustomed not to fall asleep, except when carried on the arms or shaken in a

cradle. They begin to make acquaintance with the external world when a few weeks old. It is by degrees that they taste and feel, hear and see; that they learn to distinguish their nurse, or those who take care of them, from strangers, and the existence of external objects. When they become attentive to the things around them, we ought to show them repeatedly a great number of various objects, and exercise as much as possible their external senses. They are soon tired with the same object, but pleased with new impressions, as is the case also with the greater number of adult persons. Thus, it is not a matter of indifference, whether a child be carried quietly on the arm, or whether its attention be excited towards external objects. I consider it as very important in whose society young children are kept; not that I think that children absolutely acquire the character and talents of those who are around them, but because their society will be favourable or unfavourable to the exercise of the innate dispositions.

The periods when the innate powers appear, increase, decrease, or disappear, are of great importance. Some are active early in life, and continue longer than others which appear later. The powers will be cultivated with most effect at the period of their natural activity.

There is some regularity in the appearance and disappearance of the faculties, yet there are many exceptions and modifications, as in all natural operations. Nature is immutable only with respect to the relation of cause and effect; but she modifies the phenomena in infinite varieties. It happens usually, that those powers that act strongly, appear early and last long. The intellectual faculties, and several feelings, commonly decrease in old age. Several persons, however, are particularly fortunate in preserving the energy of their mind to a great age. But the greater number of old people are deceived, if they take themselves to be still what they were when young.

Among the intellectual faculties, those of individuality, form, eventuality, comparison, and language, appear first. Children soon know many individual objects and facts, and conceive general notions; they call, for instance, every young being, child. Then the faculties of size, colouring, locality, number, order, time and tune, appear successively. Objects and their phenomena ought to be taught first, and afterwards the qualities of objects and their relations.

Among the feelings or affective faculties, those of attachment, cautiousness, love of approbation,

acquisitiveness, combativeness, secretiveness, destructiveness, firmness, benevolence, justice, and imitation, are very early active. Those of veneration and amativeness appear much later.

Let it not be forgotten, that from the earliest age, the feelings, as well as the intellectual faculties, may be educated, and that young children show no less difference in their characters than in their talents. They are patient or obstinate, indolent or lively, timid or courageous, attached to, or careless about others, &c. Let those powers which are naturally too active be quieted, and their activity prevented ; while those that do not act with energy enough, ought to be excited in a practical manner.

I have stated, that very young children ought not to be obliged to sit still in an apartment all the day, as is sometimes the case in common school education. Particular places, in healthy situations, might be instituted, where children could come together to play, and at intervals to learn things in nature, and their names, objects and their qualities, instead of sending them out only to take a walk, or to breathe pure air. Parents might thus have the advantage of having their children kept out of harm's way, and the young

creatures themselves would not be compelled to suffer the distresses necessarily experienced when restrained from moving their limbs, nor be tired by unprofitable learning. They would be pleased with acquiring the knowledge of things and of words to express them, and at the same time, they might be accustomed to order and obedience. They will also learn the signs which express the feelings, and their relations, in proportion as the feelings are excited in themselves. Gymnastic exercises also might be combined with mental instruction. The principal object of such schools should be bodily strength, order, cleanliness, notions of things, and oral signs.

The schools for children in Mr. OWEN's establishment at New Lanark, first exhibited, to a certain extent, the practical application of these principles. The infant schools since introduced in London and in the rest of Great Britain do the same; and no one can observe the happiness and intelligence which reigns among the children there, without wishing this mode of instruction generally adopted; though it may be still improved and more adapted to the nature of man.

The fourth principle of exercise is, that it must be proportionate to the innate dispositions. Too

much activity weakens or even exhausts the faculties, both feelings and intellect. This explains why too early geniuses often become ordinary men when grown up; why the mental operations, when too active, are frequently deranged, and why it is necessary to keep up the balance between body and mind, and between the individual faculties.

The brains of delicate children ought to be exercised late, and the greater their mental activity is, the less it needs to be exercised.

It is also very important to know, that during the climacteric years, when the body increases most rapidly, the mental powers are weaker. Hence, at that period, the body deserves greater care than the mind. The mental faculties will resume their activity, when the body has acquired its solidity.

Increased or diminished energy is dependent not only on the periods of growth, but all powers are liable to be occasionally more or less fatigued. No power is always equally active, each requires rest. It is, therefore, advisable to exercise one power after another. As any faculty, if too

much excited, is injured, or even exhausted, so is it weakened if it remain too long inactive.

Teachers may easily perceive the disadvantages of too long a cessation from study in the effects of vacation on their pupils. These latter always find some difficulty in returning to application and order. Intermission is necessary as well as exercise, but neither ought to be of too long a duration. They are relative, and education requires to be amended in this respect. A long vacation is more favourable to the teachers than to the students. The former, it is true, want rest, but they might alternate, for the same reason as the objects to be taught must be changed from time to time. Education should never be tedious, nor too long interrupted; different faculties should be put successively into action, which produces a kind of relaxation, and sufficient care ought always to be taken that the bodily constitution does not suffer by pressing too keenly the progress of mental instruction.

Children, who return for months to their family, are rather spoiled, during that time, than improved in order and obedience. They are indulged in their caprices, and see conduct prac-

tised in direct opposition to what they are taught at school to regard as meritorious. The frequent and long interruptions of practising the theoretical rules, prevent them from becoming altogether accustomed to them, and they wish for nothing more earnestly than that the time of learning might be over, to be permitted to act in opposition to what they have been taught, and to forget the ideas they have had so much difficulty in acquiring.

The fifth principle of exercise is, that its influence will not be the same on every individual, on account of the innate dispositions. Even different children of the same parents, and brought up by the same teachers, turn out quite differently. Indeed the fact, that the dispositions are innate, cannot be insisted on too much. We must say with HUME, (*Essays on Morality*, 3rd edit. p. 93.) that the influence of education would be miraculously great, could it but create one sense, and that this miracle is reserved to our Maker; that education may cherish and improve the plants of nature's formation, but cannot introduce any original plant. HELVETIUS, who considered man as the result of education alone, was obliged to allow that "*une folie passée rarement éclaire les hommes sur une folie présente.*" MARCUS

AURELIUS calls little politicians, and compares with children, those who maintain that whole nations might be changed into philosophers. He was satisfied by being able to contribute in a slight degree to common welfare, and to improve a few persons. He denies the possibility of establishing PLATO's republic. He, in particular insists on the importance of making any new idea popular. He adds, that without this precaution the success is impossible, that absolute power and lessons remain without effect, if the manners of the people do not change; that in this case, nations are but slaves, and complain of restraint, or are hypocrites, and feign to be persuaded.

It is more easy to cultivate the lower feelings, since they are naturally stronger in mankind; but those who are virtuous by nature will sooner learn to practise moral principles than those in whom the lower propensities predominate. Those who have little justice will with great difficulty learn to be just in a higher degree, in the same way as those who possess any intellectual faculty in a small degree, will never excel in it. The greater the disposition, the greater the effect of exercise; yet it is always true, that a proper degree of exercise strengthens the functions of each power.

The preceding considerations on exercise afford an opportunity of speaking of the method of mutual instruction. It is inconceivable how its advantages can be contested. I rather excuse those who contend for the beneficial effects of ignorance, and who object, that mutual instruction is a means of teaching in too short a time, than those who acknowledge the benefit of general information, and yet hesitate to employ this method. Its superiority is too evident to be long impeded by its novelty.

It is my decided opinion, that this method ought to be used in all branches of knowledge, which may be acquired by the influence of teachers, or which may be taught. Even those who are destined to improve arts and sciences will gain by it. The reason of this is very simple, and founded on the influence of exercise; while at the same time this method has the great additional recommendation of being the least expensive mode of instruction. This advantage is certainly of importance, but I shall examine only the benefits which result from exercise.

If there be many children or students together, the school hours are not sufficient to examine every one. Young persons, however, who are not

examined, are less attentive to their studies than those who are; their faults, not being remarked, are not corrected, and only a few are noticed. In large classes all that can be expected at present is, that the teacher should explain every thing distinctly, and repeat it with a few scholars. He addresses himself commonly to those who learn quickly. Should it happen that the master speaks to others of less talents, the better heads, knowing their lesson, cease to pay attention, or at least are soon wearied of doing so. But were the better students obliged to repeat the lesson with the others, they would experience that we learn by teaching; they would feel inclined to go over and over the same thing with those intrusted to them for instruction, while, in the common way, they cease to repeat their lessons, when left alone. At the same time the students of less capacities will be more attentive, and, on account of the constant repetition, they will remember what was lost at the mere explanation of the master.

Let us examine any branch of education whatever, and we shall find that the advantages of this method are always the same. We may take a mathematical problem for the sake of example. Suppose the rules to have been taught, and that they are to be applied. Those scholars who pos-

sess the mathematical talent in a high degree, will soon finish their problem, and will be obliged to wait in irksome idleness till many others, who cannot follow so quickly, have done. If the former, only, are called for by the master to resolve the problem, the others hear it, but it is not attended with the same advantage to them, as if they were called to work for themselves. If, on the contrary, the scholars, with little mathematical genius, be chiefly examined, those who excel in that talent will lose their time, and neglect what they know, while their attention would be excited if they were employed in teaching their condisciples. It is the same with spelling, writing, drawing, dancing, learning history, geography, languages, in short, with every branch of knowledge that is taught.

The practice of the common method can be excused only by the supposition, that all pupils are endowed with the same degree of abilities. As, however, daily experience shows the contrary, it ought no longer to be tolerated, if the object be to take the greatest possible advantage of the period of education. The new method is particularly useful in schools where all classes of children are collected together in the same room, and where, in the common method of teaching,

while one class is examined the others are doing nothing. Children are in general required to learn by themselves, but few only are capable of this exertion. According to the new method, all classes go on at the same time, and the same subject is repeated till every child knows it.

In colleges, where each class is separated, the necessity of the new method is less felt; yet, the above-mentioned reasons induce me to think, that it should be employed in all large classes, where the pupils, on account of their different degrees of capacities, naturally form themselves into several subdivisions.

The superiority of the new method, ought to determine the directors of instruction, to make a new classification in colleges, according to the subjects to be taught. There should be one professor for each branch of knowledge; one for history, one for geography, one for the mother tongue, one for Latin, one for Greek, one for poetry, one for mathematics, &c. The pupils who study the same branch might be brought together, but divided into different classes; those, for instance, who study history might be in the same room, but divided into several classes. A similar arrangement should prevail among the students of Latin,

Greek, mathematics, geography, &c. The professor of each branch might put all his classes into action at the same time, in the same manner as is done in the schools for children. Monitors might take his place in the inferior classes. In this way, the pupils would make more progress than they commonly do. It is not necessary to state how many professors might be instituted, for there might be as many as branches are found to be requisite. The principal object I here contend for is, that the better students should instruct the inferior ones, when the masters are not sufficient for the purpose. Emulation would induce the monitors to employ their leisure moments in learning new subjects. Moreover, the time which the masters give to explanation is short; that employed by the scholars in learning occupies a greater portion. This portion of time will be filled up to more advantage by the method of mutual instruction, than if every one is left to himself alone; and those who instruct others will, in this way, derive even the greatest advantage. This method, being new, has met with adversaries; but whoever will set an example of using it in the higher branches of knowledge, will find its superiority the same as it is already ascertained to be in teaching the first elements of education. The fundamental principle implied in the method

of mutual instruction, is one and the same for whatever is taught to many pupils at once. At colleges, those who are very zealous form private classes for repetition among themselves, and others who have means, pay repeaters. Every improved system of learning admits the advantage of repetition. The principal point of the Hamiltonian system too is that of continued exercise. Numerous teachers replace the monitors; and the same lesson is constantly repeated. The other great point of this system, which teaches to learn a language without the grammatical rules, does not seem to me equally applicable to every individual. It will please those who attach themselves little to principles; whilst those whose reflective powers are large, will be desirous of knowing the rules contained in their language.

The advantage of repetition then being evident, and confirmed by daily observation, it ought to be more generally practised than it is done in public institutions. The more the pupils are examined, the more they will learn, and the clearer their notions will be.

It may be asked, whether exercising the affective and intellectual powers, makes the respective organs increase? Each part of the body, being

properly exercised, increases and acquires more strength. The fact is known to be so, with respect to the muscles of woodcutters, smiths, runners, &c. Now, the brain and its parts are subject to all the laws of organization; they are nourished like the arms and legs. Cerebral activity, therefore, determines the blood towards the head, in the same way as the blood is carried to any other part when irritated, and this law of the organization may enable us to account for the developement of certain parts of the brain of whole nations, and to explain national characters, if individual powers are cultivated during successive generations.

The growth of the organs, however, is not the most important advantage to be derived from proper exercise, for it is certain that organic parts, such as the muscles, the senses, the brain, &c. do not increase in size in proportion to their exercise. The muscles which move the fingers of a musician, for instance, who plays on a piano forte, will acquire more facility and agility than size by the exercise. If we walk little during winter, and take more bodily exercise in the spring, we are easily fatigued at the beginning, but, by degrees, we can make greater excursions without suffering by them. Yet the muscles do not grow in pro-

portion as walking becomes easy. In the same way, the size of the organ of tune, or of any other power, will not augment in proportion to its being exercised, but its fibres will act with more facility.

I finish this chapter by repeating the principal points detailed in it: Exercising is the same as putting into action;—each faculty must be exercised for itself;—the means of exercising the powers are of great importance;—exercise of the faculties should take place in proportion as their respective organs are developed;—exercise must be proportionate to the innate dispositions, too little or too much does harm, but applied in a proper degree, it makes the organs increase in size, modifies their internal constitution, and produces greater activity and facility. The effect of the same exercise is different, on account of the innate dispositions of different individuals. It has been hitherto feeble; but it will be greater, when the innate dispositions of the mind and the laws of exercise are understood and attended to.

CHAPTER IV.

ON THE MUTUAL INFLUENCE OF THE FACULTIES, AS A MEANS OF EXCITEMENT.

THE fourth condition which contributes to increase the activity of the faculties, is their Mutual Influence. To employ this means it is necessary to understand, that each power may be active by its internal energy, or by its being excited by one or several other faculties; and that on the other hand, each power may be inactive either by its want of energy, or by the influence of other faculties. This consideration deserves every attention in practical education. It supposes in the teacher who wishes to reap from it all the advantages possible, a knowledge of the primitive faculties of the mind, of the natural connection of their organs, and of the individual dispositions of him who is to be educated.

It is a general law, that organic parts which contribute to the same function excite one another. The organs of smell and taste, the nerves of hunger and thirst, and the digestive power, are in intimate connection. Smell and taste often whet appetite, and the appetite excites the sense of

taste; it is therefore justly said, that hunger is the best cook. The internal feelings are equally subject to mutual influence. Amativeness, and philoprogenitiveness, frequently excite combativeness, viz. male animals fight more when under the influence of amativeness than at other periods. Females defend their young ones with more courage than any other object. Acquisitiveness and cautiousness, excite secretiveness to act. Attachment may put cautiousness into action, or we may fear for the sake of friends more than for others. Firmness may assist hope and justice, and the former may be assisted by the two latter. In short, each feeling may be stimulated by one or several others.

Mutual influence exists, also, with respect to the intellectual faculties, and is called Association of Ideas. Those persons, however, who consider association as a primitive power, are mistaken, for the activity of at least two powers, whose functions are associated, is necessarily implied in its very existence. Now, this mutual influence takes place among the feelings as well as among the faculties of the understanding, and among feelings and intellectual faculties promiscuously; that is, one or several feelings may excite intellectual operations, and *vice versa*.

The mutual influence of the faculties is the basis of what is called Mnemonics, or of the art of strengthening memory. This art is very ancient, but in consequence of its principles not being sufficiently understood, it has been rejected by some, and extolled to excess by others. The great errors committed in mnemonics, resemble those committed in all branches of education, and in all sorts of institutions. Teachers of every sort look upon themselves as the standard for the whole of mankind, and commonly have recourse to that faculty which is the most active in them, reproduces the most easily its anterior perceptions, and excites other powers with the greatest facility. They err in overlooking the differences of the innate dispositions and talents of different individuals.

The most common kind of mnemonics is founded on language; that is, words recall individual notions; written signs do the same, in bringing to our recollection sounds and ideas. They depend on the faculty of configuration. If we resolve upon doing a thing in a distant place, and after setting out to go there, forget our design, and recollect it only on returning to the place where the resolution was first made, the power of locality is the means of mnemonics, and many

teachers of mnemonics have recourse to this faculty ; they combine ideas with places, and in thinking of the latter they remember the former. It seems that the ancient orators employed these means, in order to learn their discourses with greater facility. Their proceeding appears to be indicated by the expressions denoting the divisions of the subject, such as in the first, second, and third place, &c. This power may indeed, if it be strong, assist the other faculties. Persons endowed with it, may divide and subdivide, in their minds, a given place, and put into each compartment a particular notion, and the idea will be called to recollection, in thinking of the corner where it has been lodged.

Locality, however, will be of little use to those who possess it only in a small degree ; whilst if they be endowed with the power of Form in a high degree, they will combine a notion with a figure with great facility. We may also, with other mnemonists, have recourse to several faculties at the same time, to fix the recollection of an object.

This proceeding then may be applied with great advantage in education ; but it is to be remembered, that the most active powers furnish the

best means of mnemonics, and that any particular mode of association useful to one may be useless to another, on account of the differences in the innate faculties. The general rule is to exercise, at the same time, as many faculties as possible in combination with each other, and even with the senses. The activity of one or several faculties, may excite the peculiar action of mind we wish for. The smell of a flower may recall the place where we perceived it first, or many particular circumstances connected with it. The powers of Comparison and of Causality, are often usefully exercised to this purpose, particularly in persons who cannot learn by heart what they do not understand. Others who have Imitation and Ideality large, recollect easily things expressed with ideality. Every one remembers best those phenomena, or those points in history, which are in the most intimate relation with his strongest feelings and intellectual faculties. These faculties enter into action with the greatest facility, reproduce their sensations, that is, appear as memory, and excite the other faculties.

The strongest illustration of the effects of mutual influence among the faculties, is to be seen in the effect of emulation in children, and the desire of distinction among men. Many stu-

dents learn more, in consequence of excitement produced by emulation, than by the innate activity of their understandings. The love of approbation, indeed, may excite every other power. Soldiers do not always behave bravely, from the desire to fight alone; but sometimes they do so from love of glory. Some men of talents ruin their health by continued study, as frequently from a desire of distinction as from a strong passion for the study itself.

Acquisitiveness, or the desire of gain, is another great cause of excitement of other faculties. Its influence, and that of the Love of Approbation, are of such power, that many philosophers have considered these two motives as sufficient to explain all particular manifestations of the mind. But however strong their energy may be, they never produce powers, they only excite the innate faculties to act. This fact ought to be specially attended to in Phrenology. If two boys possess the same natural endowment of the faculty of Language, but the one double the Love of Approbation of the other, he, by the influence of the latter faculty, may be rendered the more excellent scholar of the two. But if the Love of Approbation is equal in both, he who possesses Language naturally more powerful, will undoubtedly excel.

The mutual influence of the faculties being also a means by which we may direct their employment, I shall enter more into detail on this subject in the next Section, where I speak of the Motives of our Actions.

From the considerations unfolded in the preceding Chapters, I draw the conclusions that Education ought to be founded on the knowledge of Man; that the true principles of education ought not to be confounded with school-learning; that great improvements remain to be made even with respect to instruction in arts and sciences, and that the education of the Feelings, which I consider as the most important, and place far above that of the Understanding, will require to be quite newly modelled.

It is admitted and stated in the Preface, that several views developed in this work are not new, but there is a difference betwixt knowing a fact, and knowing the principle of it, and Phrenology alone can reduce to a science and system the observations which had formerly been made. This assertion will be farther confirmed in the following pages.

SECTION II.

ON THE DIRECTION OF THE FACULTIES.

AFTER having examined the conditions which contribute to the greater or less activity of the mental faculties, I shall consider the direction which ought to be given to their actions. In the same way as, in the first Section, I held it established by Phrenology, that all dispositions are innate, and that their manifestations depend on cerebral parts, called organs; so I suppose here, that my ideas on the moral nature of Man, as detailed in my work on the philosophical principles of Phrenology, are known. Phrenology shows that there is a natural arrangement among the faculties, and this circumstance is the foundation of the moral character of Man. To understand fully the ideas unfolded in this Section, it is also necessary to be acquainted with the sphere of activity of each special faculty of the Mind, and with the modifications of their manifestations. This information likewise is communicated in the work referred to, and in that on Phrenology.

In employing and directing the faculties of Mankind, we ought to proceed according to fixed and ascertained principles; the first and most important of which is, That human actions are objects of moral regulation: The second is, That each faculty has a tendency to act: The third concerns the knowledge of the motives or sources of our actions; and the fourth the difference of natural gifts. I shall, therefore, divide this Section into four Chapters.

CHAPTER I.

ON THE IMPORTANCE OF MORALITY.

ACCORDING to my ideas of the moral character of Man, his actions ought to be subordinate, or conformable to the whole of the faculties proper to mankind, and all actions which are in contradiction to the whole of these properly human faculties are bad. The point which I wish now to impress on the minds of my readers is, that human nature is so constituted by the CREATOR, that morality is as necessary to the prosperity of Mankind, as oxygen to combustion, caloric to vegetation, and respiration to human life.

The primary virtues, essential to the existence of society, are withdrawn from our election and choice, nor are they left to be directed only by so weak a principle as reason; they are identified with human nature by the dictates of creation. Submission alone to the indispensable laws of morality is left to our choice. In doing so only can we contribute to the improvement of Mankind.

Christianity promises future rewards for every sort of righteousness, such being the will of the CREATOR. But, I maintain also, that morality is necessary in this life, not because I believe, as many do, that wicked persons are tormented by their consciences, a notion which I have endeavoured to explode in treating of the faculty and organ of Conscientiousness in my work on Phrenology; but because I really think, that the world is so constituted, that morality is indispensable to the general happiness of Mankind.

It is objected, that the just often perishes in his righteousness, while the wicked often thrives in his iniquity; but shall we infer from this, that morality is less necessary to prosperity than I maintain?

The condition of individuals is subordinate to that of the community. On the other hand, one power may triumph over another for a certain time, and the animal over man in single individuals; but such a state cannot become general, nor everlasting, because the animal powers, from their tendency to the gratification of Selfishness, would, if predominant, upset society; while the powers proper to Mankind, are eminently conservative, and calculated to promote general happiness.

I grant also, that individuals and whole nations will perish, if they make use only of the faculties proper to Man. As long as Mankind remains as at present constituted, these faculties will stand in need of the assistance of the animal powers, to avoid being destroyed. But history furnishes examples, that wherever mere animal faculties have governed, the sovereignty did not last; morality and understanding being the two first principles of politics, and necessary to direct the actions of every faculty.

I am sorry to observe, that generally the cultivation of the understanding constitutes the principal object of education; and that the pupils of public establishments smile with pity at praise

given for good behaviour. I am well aware, that children of excellent conduct do not always excel in intellect; but we find also, that many young and old individuals of great understanding do not always behave as they ought to do. These persons convert their intellect into scourges of society, and are the greatest enemies to the happiness of the race. Both moral and intellectual endowments are important, and therefore ought to be cultivated in harmony. By neglecting both, societies and even nations will come to an end.

In examining Mankind at large, we shall find that general happiness is founded more on morality than on intellect. Establishments of charity for relieving distress, and correcting manners, are more beneficial to society than colleges for the study of mathematics under the government of conquerors. Morality ought to be the aim, and understanding but a means of attaining it. Those, however, who know my ideas on the primitive powers of Man, and on their moral arrangement, will know that I distinguish morality from religious creeds; that my God is a God of union, who wishes to save and not to destroy; and that, in my opinion, charity, or general love, is the greatest of virtues. They will perceive that I do

not agree with teachers who place the love of their country, and that of glory, above the love of Mankind; and that I maintain the authority and the advantage of the Christian principle, which commands us to love every one as our neighbour. CHRIST called *him* his brother who did the will of his Father. I allow, that we owe obligations to our parents, and to our country; indeed I admit that there is a primitive feeling of attachment to all beings around us. But this propensity is given also to the lower animals, and is far inferior to general love. He who considers the wants of the poor, and the causes of those wants; the deserts of the poor, and the possibility of improving their situation; who will never encourage idleness and disorder; who considers attachment as a quality of secondary weight; who relieves him first that deserves it best; and who prefers his countrymen only in so far as they are equally meritorious, is far nobler than those who are influenced by the love of their country or by a religious creed alone, to the neglect of this universal Benevolence.

It is a touchstone of superiority among the faculties that their influence is more universal. The animal feelings contribute to the preservation of individuals, of societies, and in a certain de-

gree of the species. Human feelings alone place society above individuals, and species above societies. They coincide with the proceedings of nature. Individuals perish, while nations continue; and these disappear while Mankind is preserved. The faculties which produce such effects, must be important in proportion.

When I state that the sphere of the faculties proper to Man is more extensive than that of the animal powers, this must not be confounded with the other proposition; that a faculty is more or less generally bestowed by nature. The meaning of the latter is, that a faculty exists in a greater or smaller number of species, while the former denotes that the influence of a faculty extends over more beings. Amateness is very general, while Christian charity is confined to Mankind; but the effect of this latter feeling embraces all beings, while that of the former is infinitely more limited.

Thus, in all actions, Morality is to be kept in view as the aim and end. Man, by superior powers, is the lord of the terrestrial creation; but the same feelings which constitute his superiority command him not to abuse other beings. A lower propensity excites Man to kill animals, in

order to live on them ; but the superior feelings forbid us to torment them.

All sects of religion must agree that morality is necessary to the welfare of the human race, however different their opinions may be about the mode of attaining it. But I have no hesitation in declaring against any creed that undermines charity, and which teaches children that those who do not believe as they themselves do, and that those who wish to adopt different means in order to please their MAKER, are damned. As Christianity evidently tends to unite all men in the presence of GOD, it appears to me that we are entitled to reject every interpretation of any passage of the Gospel which does not agree with general peace. The superiority of the Christian principles of morality, is proved and recommended by their good effects ; and, in this way, belief is converted into conviction.

Modified ideas about the means of pleasing God are natural, and present a large field for teaching tolerance and mutual forbearance. Various formalities are considered as agreeable to GOD ; but history informs us, that many of those, used by different sects, are borrowed from paganism. Every one ought to be permitted to do as

he thinks right, unless the general happiness of Mankind be disturbed by it. I think that he is too proud who believes that he can add to, or exalt the happiness of his CREATOR, to whose dictates all that man can do is to submit. In submitting to his dictates, we practise the true and undefiled religion, viz. in this way we shew that we are tied to GOD, and obey his will. Thus, it is an important point, in teaching religion, never to confound the *aim* with the *means*. The former is universal happiness, and loving our neighbour as one's self. The means which lead to it are various, and differences of opinion in regard to them are to be expected. It seems, however, a great error to look for happiness from Divine influence, while the natural means of producing it, appointed by the CREATOR to be observed, in the ordinary way of Providence, are neglected.

CHAPTER II.

EACH FACULTY TENDS TO ACTION.

THE faculties are innate and active in different degrees ; but each desires to be satisfied, and all are necessary ; hence it would be wrong to endeavour to annihilate or to neglect any one in the institutions of society ; whilst the acts of every individual power may be morally good or bad, that is, conformable or contrary to the whole of the faculties proper to Man. In order to elucidate this subject, I shall make first a few general remarks, and then subjoin some details concerning the primitive powers.

In the greater number of persons, the lower faculties are the most active, and several of them more so than others. This explains the great activity of the animal nature of man. Again, single individuals, each of the sexes, the inhabitants of certain provinces, and whole nations, possess individual faculties more active than others. These primitive dispositions, then, must first be studied,

and each power cultivated in harmony with the dictates of general morality, and with the particular situation of the nation, sex, or individual in question. Any feeling that is naturally too active, should never be exerted. Hence, in those children and nations, whose character is strongly marked by the love of approbation, this feeling should never be nourished by education. For, if predominant, it becomes the cause of great mischief, and it is evidently a great fault to encourage it continually, and to hold out approbation and glory as the principal reward of every action. If, among other nations, Self-esteem be the strongest feeling, it should not be encouraged. Such children are to be accustomed to attend to what others say of them, and to be spoken to freely on their faults.

On the other hand, no strong feeling can be overcome at once ; its activity will appear in one way or another, and the object of the teacher or governor ought to be to make the best use of it. The love of approbation, for instance, may lead to war or peace, to idleness or industry, to vice or virtue, according to the object approved of by the directors. It is the same with every fundamental power. Has not every crime been committed, and every virtue exercised, under pretence of

glorifying God, or of obeying God rather than men?

The improvement of mankind has been greatly retarded by the erroneous notion of our being born alike in feelings and understanding, and of our being capable of becoming whatever teachers please. On account of the differences in the innate faculties, on the contrary, education must be modified in many respects even for nations, as well as for individuals and sexes. As the inhabitants of cities cannot digest the food on which savages will thrive, so civilized nations stand in need of principles which cannot enter into the brains of ignorant and uncivilized persons. There are many examples in history, where nations have been ungrateful to their governors, who have endeavoured to improve their condition. Missionaries, who preach to ignorant and barbarous tribes in the same way as to enlightened people, cannot produce the desired effect. New-born children cannot bear too much light at once; and the mind, like the eyes, must be accustomed by degrees to new impressions.

On the other hand, governments are wrong if they retard the attainment of the degree of civilization which their nations require. They are

mistaken in thinking, that the special tendency of primitive faculties can be prohibited by mere commandment. As no institution, having for its object the annihilation of amativeness, acquisitiveness, the love of approbation, or any other feelings, given by the Creator, can be permanent; as its duration will be shortened, in proportion as such feelings are more active, in the same way, as soon as our understanding is arrived at a higher degree of cultivation, such institutions as are adapted to dark ages will no longer suffice.

The faculties proper to Man being given to govern every where, are to be cultivated incessantly, and in every one, whilst the powers common to man and animals, should be encouraged only in so far as they contribute to the great end of the satisfaction of the properly human nature, or to general happiness. The animal faculties may be employed as means, but not any one should become the aim of our existence. They may do good, when subordinate, but they produce much evil, as soon as their gratification becomes the aim of life. It is remarkable that all institutions, true Christianity excepted, are founded on selfish principles, and that by far the greater number of the motives, which they propose to mankind, originate in the animal feelings.

The regulation of the mode in which gratifications are sought, is an important point in education. Each faculty when active, wishes to be satisfied, and will excite those powers which may become the means of its gratification. Suppose, for example, that we have a desire to be distinguished, we may fight, destroy, calculate, cultivate arts, &c. according as distinction is likely to follow the performance of such and such actions. To gain eternal happiness, we may do and we may omit various things, according as we are taught that it is to result from the one or the other. Selfishness, in general, is a great stimulus. The gratification of individual faculties may even become a means of obviating their abuses. Acquisitiveness, for instance, may be prevented from stealing and cheating, &c. by placing before the mind the consequences of illegal actions, and by showing, that the best calculated selfishness is that which is combined with honesty.

Though it is a pity, that, in common education, the satisfaction of the inferior faculties is generally represented as the aim of our existence, and of the whole of our actions; their gratifications, however, may be of great use, being a source of pleasure, and the contrary a punishment. The idle being pleased by vacancy; the dainty-

mouthed by cakes and sweetmeats; the vain by decorations, fine clothes, &c.; the mechanician by ingeniously contrived instruments; the painter by colours. There are as many sorts of reward or punishment as natural gifts, but the gratification of those powers which are not requisite to our profession, should be only an object of reward and recreation, the difference between aim and means being constantly attended to.

A question which has been often repeated by philosophers, may be brought in here, viz. Whether it is better to have many or few wants? Want is here synonymous with Desire, or the tendency of individual faculties to seek gratification; and there are as many sorts of wants or desires as there are primitive powers.

To answer this question, we must bear in mind, that the satisfaction of each desire gives pleasure; that there are as many sorts of pleasure as there are faculties, and that desires and pleasures are proportionate to the activity of the powers; moreover, that the pains, displeasures, or states of dissatisfaction, are also as numerous as, and proportionate to the activity of, the faculties. Thus, wants or active faculties may render us happy or unhappy.

In order to prepare happiness for ourselves, let us exercise those faculties which we have the power of gratifying, and check the activity of those which we cannot satisfy; taking constantly for granted, that morality is the aim of our life, and that no animal power shall be permitted to become predominant; that Ostentation, for instance, must remain subordinate to Justice, and that spending our superfluities on purposes useful to society, is preferable to employing them in the gratification of any animal propensity.

The proper employment of the faculties being so important, this knowledge is not only necessary to teachers and governors, but it should become an object of instruction for every person, and be taught and learned by heart.

We must eat and drink, because we are excited to do so by hunger and thirst. But the laws of digestion and nutrition might be explained, the respective organs shown, and the necessity of submitting to the dictates of creation taught. The knowledge of the general rules of *HYGEIA* is useful to every one. Let children know, that they must eat to live, but that they do not live to eat and to drink; let them feel the advantages of sobriety, and the consequences of indigestion;

let them see the vice of gluttony and drunkenness in nature, and be accustomed to temperance, and to the moderate use of every sort of food. It will be easy to render them attentive to the quantity and quality of aliments necessary to be taken, and to those which do not agree with their digestive organs. It is important that they should be able to resist the desire to eat of every dish that is placed on the table.

It is a great fault of parents and teachers to preach sobriety, and themselves to give a contrary example. The example is more effectual than the precept. I think it also wrong to give dainties and liquors to children as rewards, for it is in this manner that they are taught to value them. They may enjoy the sense of taste, but they ought not to be governed by it.

In speaking of hunger and thirst, food, beverage and nutrition, a great deal of knowledge may be given to children at table, with respect to the natural history of the three kingdoms, and with respect to chemistry and physiology. Parents might direct the conversation towards convenient subjects, and enter into farther explanations after dinner. Certainly this supposes the parents themselves to be well informed, which, however,

is too frequently not the case. The duty of instruction devolves particularly on the mother; and if there be several children, the elder may inform the younger.

Is not the great curiosity of children a hint of Nature, that they ought to be made acquainted with many subjects? Why then do we not rather cherish than suppress it? We should always answer, even when questions are put to which delicacy does not allow us to reply. In such cases, we may find an excuse by observing, that they are not yet able to understand the thing. This will be believed, if we show them the reality of such an excuse in other examples. But they must never be told they ought not to know such things. A formal denial will excite their curiosity.

The objects which concern cookery, eating and drinking, and play-things, furnish sufficient matter to different conversations. We may put questions about the origin, usefulness, and preparations of aliments, by degrees. Each object will offer a large field of information. I suppose, for example's sake, that potatoes are placed on the table, the mother may ask, To what kingdom of natural history do they belong? According to

the age of the children, various questions may be added. After the first notions are communicated, the mother may continue to inquire about the parts of the plant which we eat under the name Potatoes. The discussion again will require to be more or less detailed, according to the capacities of the children. Whatever cannot be shown at home, could be noticed on taking walks into the fields or elsewhere. In what country are potatoes indigenous? How are they cultivated, &c.

Another time, the mother may begin a conversation concerning bread. Children may learn the difference between rye, wheat, oats, &c.; the manner of grinding corn, of baking bread, &c. In this way, every article may be made an object of instruction and amusement. Children will learn ideas and combine them; they will know every thing around them, and will feel a desire to know it. They will at the same time learn to think when they speak, and to express no ideas without reflecting on them.

Bodily exercise is another important point in education. Muscular activity is greater in childhood than in any later age. It is necessary to the developement of the body and to health. To keep children quiet is acting against nature. The

body and the intellectual faculties, however, may be exercised at the same time. Playing is to be considered as a mere change of occupation, and many things may be taught by means of it; to dance, for instance, to climb, to leap, to swim, to go on horseback, to fence, &c. The muscles of the arms, or legs, or trunk, may be exercised according to the utility of such exercise in any future situation, or according to their local weakness. All gymnastic amusements serve to these purposes. It is to be understood, that bodily exercise ought to be proportionate to the innate strength and progressive growth of the individuals. It is said, that MILO carried on his shoulders a calf day by day, till it was full grown.

On the play-ground, children may be made acquainted with a great number of objects, their physical qualities, such as form, dimensions, weight, colour, distances, phenomena of hydraulics, mechanics, and chemistry. Nothing, for instance, is more easy than to teach what is called gravity, affinity, attraction. Let children collect stones of different specific weight, let them make figures in the sand, such as circles, triangles, squares. - They will do it with less pleasure when they are confined to the benches. It is known,

that girls, in amusing themselves with dolls, exercise many faculties necessary to their future condition in life.

The external senses deserve particular attention. Though they are not sufficient to make us acquainted with the external world, they are, nevertheless, indispensable means to acquire distinct perceptions. Blind and deaf persons show, how in the former the sense of touch, and in the latter that of sight, can be improved. For those who feel an aversion to touch innoxious insects, for instance, a lizard, a frog, a crawfish, or even velvet and other tactile objects, an early habit of doing so is advisable. It is the same with regard to a dislike to certain smells, tastes, colours or sounds. The ears ought to be exercised to bear the noise of a gun, of thunder, &c.

Children ought to be accustomed to speak loud, and to pronounce all possible sounds and articulations, even those of such foreign languages as they will be obliged to learn; for almost every language has its particular sounds which we pronounce with difficulty, if we have not been early accustomed to them. Accordingly, nations who have the greatest number of sounds in their speech, learn the most easily to pronounce foreign

languages, since they know their articulations, by having met with similar sounds in their own language. The French and English having no guttural sounds in their language, find it difficult to imitate them in the German. The Germans, on the contrary, who have not the sounds of *j* and *v* of the French, or of *th* in the English, acquire them with difficulty. The inhabitants of Otaheite, when trying to pronounce the name of Cook, always said Toutou.

As to the internal powers, it is a great fault in education, to think exclusively of the intellectual faculties, and to try to conduct mankind by precepts. It never should be forgotten, that children, as well as adult persons, always act by feelings, and that charity and justice are no sciences. Precepts alone have no more effect on feelings than on understanding. To say, be just, patient, and benevolent, will neither produce nor exercise justice, patience, nor benevolence, any more than we should understand mathematics, chemistry or philosophy, if we were only exhorted to study them. Precepts must be put into execution, and this alone is of practical use. Two ideas, then, must be well understood; first, that the faculties which give feelings, and those which constitute intellect, exist independently of each

other; and, secondly, that they act in different degrees of force in children as well as adults. In this sense, we may say with DE LA MOTTE, that the child is already a man, and the man still a child. It is the same idea which DE LA BRUYERE on characters (T. II. chap. xi.) has detailed, in stating, that children, like adults, are affectionate or selfish, courageous or timid, candid or disingenuous, lazy or industrious, benevolent or envious, peaceable or quarrelsome, unsteady or persevering, humble or proud, just or unjust. The powers are, indeed, the same in children and adults; they are only applied to different objects. The same person, when a child, may be jealous or envious about sweetmeats, and when adult, about places of honour. The same faculty renders a child self-willed, a boy disobedient, and a man mutinous. Mr. COMBE has well expressed the same idea; "The child," says he, "who trembles at the threat of being shut up in a dark closet; who exhibits to us with delight his new suit of clothes; who fights about a marble; or who covets his neighbour's top, is under the influence of the same faculties which, in future years, may make him tremble under the anticipation of a fall of stocks; make him desire to be invested with a star and garter; contend for an island or a kingdom, or lead him to covet his

neighbour's property." (Essays on Phrenology, p. 315.) Hence the individual tendencies must be observed, impeded, or encouraged and directed. A young girl, whom I know, was prohibited from being imperious to servants and common people; she continued to amuse herself with giving orders to such of her playthings as represented servants, and with scolding them. When she was told that she committed a fault, she excused herself by saying, that it was merely a play. But the parents were intelligent enough not to confound the feeling of self-esteem with any object of its satisfaction, and this amusement was equally interdicted.

If any inferior feeling be too energetic, it is proper to avoid every circumstance that may put it into action. Accordingly, never vex quarrelsome or obstinate children, and at length yield to them and let them have their own way; never desire such children to do what is unjust; make every demand on them quietly, but never yield.

It is essential to know which faculties assist each other, and which act in opposition, in order to direct the actions and omissions of man. Attachment will generally rest on objects, men, animals or things, whereby the other feelings may be satisfied at the same time, or, at least, not

prevented from being so. It is assisted by mildness and cautiousness. Children endowed with these feelings, and with ideality and love of approbation in a high degree, in order that they may not be deceived in their dealings with man, should be made acquainted with the difference of men, and with the various motives of their actions.

Courage is not given to indulge quarrelsomeness and anger, nor to effect gratification of vengeance. Its aim is to defend what is absolutely just. If not active enough, it ought to be encouraged, not only by words, but by exposing the individual to situations which may appear annoying. Timid children will become less fearful by being accustomed to society. If courage be too strong, its bad consequences may be shown; and, according to circumstances, attachment, selfishness, the love of approbation, or the moral feelings, may be opposed as motives to restrain it.

Selfishness and the love of approbation, act with the most different appearances, according to their combinations with other faculties, and to external circumstances. It is known, and I have already mentioned, that their activity has been considered, by some philosophers, as sufficient to

explain all the actions of man, and even as the source of superior talents. Indeed, whenever we omit any thing, in order to gain any earthly or heavenly enjoyment, selfishness is active; and whenever we wish to be approved of, the love of approbation comes into play. The tendencies of these two powers are easily distinguished in children; but I repeat, that their preponderance produces great mischief in society; that they are too much cultivated in common education, and that it is an error, the evil consequences of which are incalculable, to represent them as the chief aim of our existence, while they ought to be only secondary motives. I have seen children endowed with a great deal of pride and love of approbation, who became quite intoxicated by being praised, and, certainly from this excitement, committed new faults, and sometimes became intolerable for several days.

Let us examine with some more details whether selfishness and the love of approbation produce talents; and whether the satisfaction of these two feelings should be the aim of all our actions? Is it true, that arts and sciences originate and improve in proportion as they are patronized by pecuniary rewards and honour? In Greece, the masterpieces of poetry, eloquence, history, and

philosophy, were not the result of patronage. The successors of ALEXANDER the Great encouraged the learned, yet sciences lost their grandeur and originality. Only commentaries, compilations, and imitations became numerous. In reading history, we meet with many great men who found their reward in the cultivation of the sciences and the arts themselves, and who were even persecuted on their account. Many others have persevered in contributing to the improvement of arts and sciences, only until they met with rewards and honours; and it was fortunate if this did not happen too soon, as it appeared they worked only for them, and became idle when their aim was attained.

If individuals, because they possess some talents, are to receive the privilege of deciding on the value of every scientific production, their elevation to distinction becomes a great obstacle to the progress of arts and sciences, because the learned themselves are not free from selfish passions, and, like the vulgar, are ready to hinder others from attaining similar enjoyments and honours. Few are disposed to acknowledge the superiority of others.

As the great maxim of a liberal government is,

Let them act, so the true patronage consists in not preventing talents from exercising themselves, as long as absolute justice towards mankind is not injured; in rewarding productions according to their influence on the general welfare, and in rewarding only services actually performed. Among the abuses concerning rewards and distinctions, I mention only the fault to give to regular professors the exclusive right of teaching, and what is still worse, to permit them to delegate their duties to any substitute they may choose. Monopoly impedes improvement in every thing. If the services of a professor be useful to society in other avocations, and he cannot attend to his scientific pursuits, his professorship ought to be transferred to the person who, next to him, cultivates that branch with pleasure and success.

It is certain that reward and distinction do not *produce* talents, though they are of great weight in exciting and directing the actions of all the faculties. I even infer from history, that mankind will suffer, and that all institutions will remain imperfect, as long as selfishness and glory are the aim of our actions; or, in other words, as long as places are looked for with a zeal in proportion to the profit they bring, and to the distinction they bestow on the possessor, whilst all

our actions ought to tend to the common benefit and honour of mankind. Nothing but the place we occupy in society, and fitness for its duties, should give distinction. It should be considered as every man's duty, to do all that he is capable of doing for the general happiness of those among whom he lives. Private interest, when exclusively pursued, is the greatest enemy of morality. Whoever contends for it as the chief aim of our existence, acts after the impulse of his animal nature;—he is not a man.

Selfishness, it is true, has greatly contributed to abolish various kinds of injustice, for every one is ready to resist his oppressor. In religious and civil legislation, privileges are more and more limited, and the rights of man become more equal than they were in ancient times. We no longer believe that all mankind is made for the sake of a few. Indeed, as long as there is any thing to gain, there will be many who will contend for independence, out of mere selfishness; but the principle from which they act, though hitherto auxiliary to the common good, cannot be applauded; for it would lead them to tyrannize in their turn, if they had the power.

Mankind cannot become happy, if selfishness

be not replaced, or at least mitigated, by a superior motive of action. He who pursues his own advantage only, so far as he can do so without injuring another, is just ; he who gives up his superfluity rather than to do harm to another, is noble ; he who works only for the common welfare is the most noble, and no one, but him, deserves that name.

A great step towards perfection, would be the full and practical admission of the principle that every one has the right to employ his talents to the utmost for his own benefit, as far as he can do it without injuring others. This system of government is certainly far superior to that of exclusive privileges of any kind :—Many battles, however, will be fought betwixt selfishness and bigotry on the one hand, and reason and sound morality on the other, before it is generally admitted and followed.

It must be added, however, that the adoption even of this principle cannot be expected to obviate misery, nor luxury, with all its fatal consequences, for this simple reason, that the natural endowments of individuals are very different, and that those who have more talents will govern the others in one way or another. While selfishness

continues to be the motive of their actions, the highly gifted will employ the weak to advance their own ends. The poor will be constantly dependent on the rich, and will serve them as the only thing they can do to live. Supremacy will, of necessity, fall on single individuals. Nations also, through selfishness, interfere with each other, and war becomes unavoidable. The fortunate commander finds satellites whose advantage it is to serve him, as workmen serve the manufacturer; he avails himself of their talents, and tells his countrymen that peace, and obedience to his will, are essential to their happiness. Is not this the state of Man as far as history informs us? And this must continue to be his state, wherever personal welfare is the only rule of conduct. Tyranny causes revolutions; revolutions, again, are productive of tyranny; and all this has its origin in selfishness. There is no possibility of changing this permanent circle of events in mankind, except by subordinating private interest to common advantage.

This doctrine is not new, it is the basis of Christianity; but it has been dreadfully abused at different times, even by pretended teachers of morality. It is nowhere practised in its full vigour, and happy is the nation whose governors

follow it even in a limited degree. But it ought at least to be generally propagated, and its good effects shown to every one who is capable of appreciating them.

The faculty of Firmness greatly assists the activity of every other power, but it also produces many disorders, particularly if it be naturally strong, and if parents, in order to form the character of their children, as they say, allow them the gratification of every fancy. Such beings are exasperated by the least resistance in future life, and become frequently unhappy. Mere opposition stimulates firmness, particularly if it be combined with self-esteem, or love of approbation.

Firmness alone will never produce great actions. It only causes the active faculties to persevere. Hence the same person may persevere much in one respect, and very little in another. It has particular influence on self-esteem, the love of approbation, justice and veneration. Ideality, and the want of order and time, are in opposition to perseverance.

The direction of amateness and of the religious sentiments is of prime influence. These

feelings appear commonly later, sometimes, however, earlier in life.

The longer the difference of the sexes can be concealed from children, the better. But as soon as children are inclined to abuse their persons, let them know the dreadful consequences of such a vice on the whole body, and on the manifestations of the mind. The picture may be varied, according to the knowledge of the child, and to the bad effects which are already visible in him. Every thing which excites nervous irritability, and accelerates the circulation of the blood, must be avoided. Bodily exercise, however, cannot be dispensed with, as it is necessary to produce sleep. If the functions of propagation be known, the influence of the vice, not only on him, but on generations to come, may be detailed. Many ideas of this kind are mentioned in books on physical education. I refer to them, mentioning again, that a too anxious taciturnity of parents concerning these points, will rather do harm than good, because the propensity is innate, and acts without restraint, if its destination, and the consequences of its abuses, be not clearly shown to children. Being informed of its importance, they will more readily resist, and submit to those means which seem necessary to restrain it.

The regulation of the religious feelings also deserves great attention. It is known how very different the ways of worshipping have been, from human sacrifices to adoration in spirit and in truth. It is remarkable that at all times continency has been considered as agreeable to God. The priests of the ancient Egyptians avoided wine and wives. The Levites were obliged to avoid the intercourse with females during the time of their sacerdotal service. In Ceylon and Siam the priests are prohibited from marrying. The Roman Church requires an observance of a similar law.

Religious precepts of various kinds, and the most opposite opinions, when proposed as the will of God, have been listened to. The majority of mankind is credulous. Say that it is necessary to sacrifice animals, to burn perfume, to ring bells, to fast, to sing, to make prostrations, to dance, to whip the body, or to do various other things in honour of God, and man will comply. Even those who reflect for themselves, and admit the revelation of Christian principles, will differ in their explication of them. The question, then, is often put, Who can decide which is the true religion? As the tree is known by its fruit, so is the man by his actions, and a doctrine by its effects. I think that the touchstone

of every principle, religious and moral, is the same, viz. its tendency to promote the common happiness of mankind. It is absurd, and even blasphemous, to hold out any doctrine as coming from God, the manifest tendency of which is to inflict evil. I adopt, therefore, only that explanation of every passage of Christianity which favours general love.

There are religious people who agree with respect to principles, but vary as to the particular applications of them. They insist much on some, and are indifferent about other points; and sometimes follow the absurdities of their own imaginations; they explain one passage of the Gospel according to its spirit, and take another literally. Others admit the principles, and say that they believe in them, but care very little for their practice; whereas the least portion of intelligence and honesty might enable them to perceive, that the practice is better than the mere assertion of belief.

In religious education, as well as in every other sort of instruction, three things are particularly to be kept in view; first, The objects taught must be suitable to the station of those instructed; secondly, The knowledge communicated must be appli-

cable; and, thirdly, The necessary means for attaining the end must be pointed out and attended to. With respect to the first point, the choice of objects to be taught, there can be little difficulty in deciding between the advantages of communicating a knowledge of fabulous tales or examples of moral conduct; of teaching habitual charity or vice. Children ought to be taught that moral conduct is the aim and end of their existence, and that morality is indispensable to the welfare of individuals and of society. And moralists, who wish for the improvement of mankind, ought not to reject any means of attaining that end, except those which have been tried and found ineffectual; but these should be given up, of whatever date and authority they may be, and only those that prove useful be employed.

Thus, all powers should be directed with a view to practical life, the intellectual faculties to the acquisition of positive knowledge, and the feelings to the promotion of the general welfare.

There is another great error generally committed in public schools, viz. the third part of the year is given up to idleness. This may be necessary, because the objects to be taught are few, and because the faculties employed are fatigued,

and require rest or vacation-days; but these might be filled up by the useful employment of other faculties, which could be exercised one after another. In that way more knowledge would be acquired, and sufficient time allowed for relaxation to the individual faculties.

Natural history, mechanical and chemical experiments, are well suited to the capacities of youth, and would delight many; architecture, painting, music, geography, theatrical performances, military evolutions, &c. would please others. No better recreation would be wished for. The great error is, that all children are obliged to learn the same things; the boys Latin and Greek, and the girls music or drawing. Yet out of the prodigious number of girls who learn these arts, how few are there, who, after they become mistresses of their own time, and after they have the choice of their own amusements, continue to practise them for the pure pleasure they afford. Even those who take pleasure in good music, are better pleased with hearing others than in performing themselves. How often are the labours of years, and the expenditure of large sums of money, lost in this way? What a pity, that we are obliged to learn so many things for no end but to forget them!

Accomplishments in general are not sufficiently distinguished from necessary and useful instruction. The latter is often neglected, and things are taught for which children have no taste, such as drawing and music, while they never would take a pencil in their hand nor play a tune from choice. How glad are they, therefore, when the time for lessons and masters is over, when they are of age, and their education is finished. Many women, possessed of such accomplishments, never touch the heart of a man. They find a partner only for their money, but the result of such a union is daily seen. Leisure time alone should be filled up by accomplishments, and whoever does not cultivate them from his own impulse, should not cultivate them at all.

Order is of great importance in our affairs. Children ought to be accustomed to take care of whatever belongs to them, and young females should be exercised in keeping the family-accounts. Order does not depend only on the understanding, but it requires also experience. This cannot be infused into the mind by precept, but must be acquired by practice. Every one should learn to employ his own powers, and to regulate his own conduct, and for that purpose he should be placed into various situations, and left to his own re-

sources. This is particularly necessary to boys. Girls are more dependent, and, in many respects, they may be accustomed to trust to the experience of others, and to conform to the customs of society. Their faults are of greater consequence than those of boys to their station in society; for repentance and tears will not wash out the errors and immoral conduct of girls.

Refined manners are a great ornament, and ought always to be cultivated. All odd motions or attitudes, and awkward gestures, should be watched and prevented from becoming habitual.

The reflecting faculties deserve particular care. Let children be taught, if possible, to understand what they say and do, and to express their own ideas with precision. I have already mentioned, that those persons are mistaken, who think that reasoning can be improved only by one sort of study, such as of language or mathematics. The fact is, that studying any branch accurately, applying judgment to it, and reflecting on the relations of Cause and Effect which it exhibits, will cultivate the reasoning powers with equal effect. Comparison and Causality are necessary in important and in trifling things. If children have great difficulty in reasoning, the first attempt here,

as in every other branch, is the most difficult part of the work. We should therefore allow them time to reflect, and wish that they should rather acquire one distinct idea, than many confused notions of different things.

The erroneous method of instruction generally pursued, is the cause why many, when at the end of their school-education, must become their own teachers. Those who have not talent or courage enough to do so, remain within the circle of mediocrity, and are mere followers in the paths of others. Yet copying, or merely imitating others, is the death of arts and sciences.

I conclude this Chapter with repeating, that each faculty tends to act; that each faculty may be used and abused; that all faculties ought to be employed in augmenting the common happiness; and that moral conduct and reflection are the principal means of producing it; but that precepts alone will not change and improve mankind. Their influence is little in comparison to that of social intercourse. The manners of the world, the spirit of families and of parties, customs and received opinions, are often opposite to those which we are taught at school. We hear sobriety praised, and in our families we find

luxury ; disinterested conduct is highly spoken of in our books, but we live in the midst of a crowd of busy creatures, whose most anxious thoughts are directed towards gain and vanity ; and we observe, that respect and consideration are paid to others in proportion to their wealth, idleness, privileges, and fanciful, nay selfish distinctions. School-education is then soon forgotten. Whoever, therefore, has an influence on society, let him contribute all in his power to cause the same spirit to prevail in education, in legislation, in social intercourse, in writings, in arts, and in sciences.

CHAPTER III.

THERE IS NO ACTION WITHOUT A MOTIVE.

THE principle that no action takes place without a motive, is the same as that there is no effect without a cause. Yet the nature of the motives of our actions, and their origin, are not sufficiently understood.

As long as it is believed that education can

create faculties, the whole of mankind will be treated in the same manner, and the same motives will be proposed to all men. But when we know the influence of innate dispositions, we perceive the necessity of having recourse in each person to his natural powers, and of fortifying or guiding them by cultivation.

I here repeat, that our faculties, inferior and superior, furnish the motives of our actions, that, in consequence, the motives are different like the faculties themselves; but that the proper aim or object of our actions is only one. I take it also for granted, that the cultivation of the faculties proper to Man is the aim of his existence; since they alone constitute moral rectitude, and general happiness, and submission to the laws of creation.

The superior faculties, when they act by themselves from their internal energy, do so with pleasure, and constitute the kingdom of love. But, whenever they must be excited in any way, or when the energy of the inferior faculties requires to be moderated, then government and obedience, or the rule of the law, begins. As the inferior faculties, however, exist in human nature, and stand in need of constant regulation, it is evident,

that CHRIST, although in His own person He fulfilled the law, could not abolish it. Its existence is the will of His heavenly Father, and the constitution of human nature evidently requires it.

The motives arising from the superior faculties of man, are also termed Religious and Moral; *religious*, as far as we stand in relation to God, and *moral*, in so far as it is our duty to act in such or such a manner with respect to mankind.

There can be no doubt that our Maker has bound us by laws which must be obeyed. These laws are established by the Creator, and have been confirmed by revelation. Man is a moral being, and the law of his natural morality has been confirmed by Christianity. This matter, exercising the greatest influence on the happiness of Man, is considered, with details, in my work on the Philosophical Principles of Phrenology.

Children may soon be made to comprehend that they cannot change the laws of nature, and to see the necessity of submitting to them. When they understand the tendency of these laws, they will feel respect and veneration for that Almighty Being who instituted them, and for His all-wise appointments. But it will be a matter of greater

difficulty to make every one comprehend and honestly love the general good as the aim of our existence, though it is conformable equally to the law, natural and revealed. The desire for the common welfare of mankind, is not strong enough in man, to allow us to depend on it as a sufficient motive of self-direction, and, accordingly, various means have been, and still must be employed, in order to direct our actions towards this point. A knowledge of the different motives of our actions, then, is indispensable. If the moral law be written in the heart of a man, that is, if the faculties of Justice, Benevolence, and Veneration be naturally most powerful in any person, let us appeal to them. If another be more disposed to obey, because it is commanded by the revealed law, that is, if his Hope and Marvellousness be naturally the most powerful faculties, let us not reject these motives. The same aim is to be attained, but the means may vary.

If the superior motives of man;—his natural charity, his religious faith, and his reasoning powers are not sufficient to direct his actions, inferior motives must be employed, such as love of approbation, acquisitiveness, reward and punishment, fear, &c. Many persons are prevented from

stealing, through the criminal code, or the fear of hell, or of being dishonoured.

The kingdom of fear and selfishness is infinitely more extensive than that of love. The former has existed, exists, and will long continue to exist, but the latter cannot come, as long as selfishness and the love of approbation are presented as the aim of our conduct. While these are considered as the objects of human existence, conquerors will prevail over their satellites, like BRENNUS, who sent wine from Italy to his countrymen, saying, If you like this wine, come and help me to conquer the country where it grows.

It is essential for a teacher, or any one who directs others, to know that different motives may produce the same action in different persons. One child may behave well through attachment to his parents; another through fear, or the love of approbation; a third through selfish views, or a feeling of duty.

Moreover, it ought to be kept in view as a principle in moral and intellectual education, that children do many things by mere imitation. They often adopt the manner of thinking and act-

ing of those with whom they live. They consider as good that which they hear praised and see done by their parents. For this reason we know by the children whether we are liked or disliked in a family. This propensity to imitate will produce most effect in children whose natural character is not very determinate, and in them it may be applied with advantage as a means of instruction. Parents therefore become the best moral teachers; but let their moral conduct agree with their precepts, if they expect to produce any effect by their teaching. If they show in words an abhorrence of vice, let not their actions be stained by impurity. When they teach their children to avoid bad company, and to esteem virtue and excellence above the distinctions of wealth and rank, let them not be encircled themselves in fashion and vanity. If they exhort them to order, truth, candour, and charity, let them prove their sincerity by their own actions.

Many children, at an early age, are capable of feeling arguments, but several cannot. Parents and teachers should be always just and reasonable in what they require of them, and then never yield to any resistance or remonstrance whatever on the part of the child. A habit of submission is of the

utmost consequence to the moral improvement of children.

Children, however, as well as adults, like what is conformable to their natural dispositions. If their intellectual powers are very active, they may be allowed to follow their dictates, and to determine even their own future situation in life. But, if parents wish to bring them up to professions which they themselves prefer, and not according to the natural gifts of the children, or if children are not distinguished by their talents, they must be encouraged, by various means, and sometimes even forced, to exertion, and to make a choice of employment. Without this, many children would become careless and idle. It becomes necessary to impose tasks whenever the natural dispositions do not induce children to attain the knowledge requisite for their profession. It is always an error to allow idleness and free hours as a reward, because such a proceeding implies that learning is a punishment. It is not very judicious, neither, to conduct education, so that kings' birth-days and holydays are liked, because they exempt children from attending school. This is nearly as bad in principle, as compelling them to learn verses or write versions by way of punishment. Certainly

a better mode of chastisement might be found. This kind of punishment is similar to that inflicted by some priests, who, as a penance, command a repetition of certain prayers.

Although I am obliged to allow, on the one hand, that few persons can be guided by the superior feelings alone, and that reasoning is seldom of any great weight as a motive of conduct; and although it is obvious, on the other hand, that the greater number of persons are actuated by inferior motives, and even by commandment and by fear, yet I would recommend, that the propriety of making use of all possible motives to produce virtuous conduct should be kept constantly in view, and that every motive should be employed, beginning with the most noble and elevated, and ending with the lowest, viz. impressions on the sense of feeling, and the sensations of hunger and thirst. We may reason with those who understand the laws of the Creator, and feel their importance, whilst others, who cannot comprehend these laws or perceive their utility, should be restrained by inferior and selfish motives, even by disagreeable impressions on their senses, or by feeling the pains of hunger, or solitary confinement.

CHAPTER IV.

EVERY ONE HAS HIS NATURAL GIFTS.

THE reader, somewhat versed in Phrenology, will easily perceive, that the different considerations of this work are in the most intimate connection with, and even founded on, ideas developed in other publications to which I have frequently referred. In this Chapter I take it for granted, that all mental dispositions or powers, are innate, and I speak of them in so far only as regards the direction of their actions.

In respect both to sentiments and intellect, mankind may be ranged in different classes. There are persons who may be called fortunate, if not elect, namely, those who, from the felicity of their natural constitution, desire only what is good, who act from love, and show pure morality in all their actions. In these happy beings, the superior feelings predominate much over those common to man and animals.

The rest of mankind, by far the greater number, are obliged to combat against the activity of the inferior feelings, and stand in need of the law to direct and restrain them. Three subdivisions of this latter class may be considered. The first embraces those who have one or several of the inferior as well as one or several of the superior feelings very active. These persons may be great in vice or virtue, according as they follow the dictates of their inferior or superior faculties.

In the second order, may be reckoned those in whom certain inferior faculties are very active, and all the superior very weak. Such individuals are exposed to the danger of being overwhelmed by vice, in proportion to the weakness of the superior motives. This disproportion is common in great criminals.

In the third class are placed by far the greater number of mankind, namely, those individuals in whom all the faculties are middling; those who act according to education and external circumstances, and follow, without examination, the moral and religious principles which they are taught. Some philosophers, founding on them as instances, have been led to maintain, that man does every thing by imitation. Though that opinion be

erroneous, the influence of imitation, remains very great, and we may say with Mr. COMBE, (*Essays on Phrenology*, p. 322.) "As a general rule, whatever you wish your child to be or do, be that or do that to him. If you wish him to be outrageous, to be cruel, to be quarrelsome, be outrageous, cruel, and quarrelsome to him. If you wish him to be humane and polite, be humane and polite to him. If you wish him to be just and pious, be just and devout before him." The great mass of mankind, indeed, cannot be left to their own guidance; common people, when tempted, easily yield; education, therefore, in all its details, legislation, and all public institutions, ought to contribute to accustom them to regularity and order. But, at the same time, the rulers of mankind must not expect the lower minds to be obedient whilst they forget their own duty. Power is given, not for the selfish gratification of those who are invested with authority, but to promote the general happiness of the community.

With respect to understanding, it is also certain, that few are endowed with a mind so comprehensive, as to enable them to learn whatever they please, and to embrace the principles of universal knowledge. Some are given rather to deep reflection than to great learning; others

have less reflection, but much talent for acquiring erudition ; and, in the last place, the greater number do not excel in any department of knowledge, of art, or of science whatever ; but may learn any thing that is necessary to qualify them to become useful members of society.

The preceding facts being ascertained by observation, we may examine the question, Whether the same kind of education will equally suit every individual ?

The aim in educating all must be the same, namely, to render them virtuous and intelligent ; but as the natural endowment of individuals is different, all persons are not capable of the same improvement, and every one cannot be induced by the same motives to pursue the same end.

The faculties proper to man, being the aim of all our actions, should be cultivated in every person as much as possible, but the natural difference will be observed with respect to the energy of these, as well as of the other faculties in different individuals. Nature, by her endowment, constitutes some characters moral, and others religious. The latter will act more from faith, the former from duty. Yet, the law, " Love

thy neighbour as thyself," must be constantly held up to both, as the object of their exertions, and obedience to it required, even of those who do not feel inclined to do so.

If the superior motives be not sufficiently strong to produce this obedience, the lower faculties must be employed. The influence of the latter powers, then, is double; they constitute motives themselves, and they also assist the superior feelings to arrive at their gratification. Among the lower motives, selfishness and fear are the most generally energetic, and no legislation can exclude the use of them.

Thus, a true system of education cannot be founded on single views, or established according to single individuals; it must be adapted to human nature. Whoever will direct man, ought not to hold out only one motive of action. He who endeavours to change every person into a philosopher, and he who will never reason with any one is equally mistaken. A preacher who invites others to become morally good, will err when he trusts entirely to the motives which govern his own actions, not being aware that sometimes such motives make no impression on others. He ought to bring forward all possible

reasons to touch all his auditors, and make them feel those motives which they are susceptible of. He ought to be particularly careful to be understood, and to speak by examples. Moreover, his precepts must be confirmed by his own actions. He who teaches order and cleanliness, must be orderly and cleanly himself; he who preaches peace and charity, must not deny these principles by his moral conduct. Those who say, Follow my words, but not my actions, are unfit for their situation, and ought to be replaced by more worthy subjects.

It follows, that the feelings, as well as and even still more than the intellectual faculties, ought to be considered before children are destined to certain professions, or adults to certain places. To bring up a child endowed with great animal propensities, such as Amativeness, Combativeness, Acquisitiveness, Self-esteem, &c. to the church, whatever his intellect may be, is the height of error and absurdity. Nothing has done greater harm to society, than placing individuals in professions and situations for which they were unfit, not only through the want of some necessary faculties, but also through the inordinate activity of some of the opposite ones. Strong amativeness or cruelty produces mischief in a Roman Catholic

priest, as does the love of domination in the representative of a free nation, corruptibility in a judge, fear in a general, &c. The feelings, also, ought to be exercised with a view to the future destination of children. Combativeness is to the soldier what Veneration is to the clergyman; but, in both, benevolence and justice should be active.

It is also impossible to insist too much on the importance of considering the effect of the natural feelings, in the choice of persons to rule or to lead society. This highly interesting point can be perceived, in all its magnitude, by those only who are convinced, that the faculties which produce feelings, are natural gifts differing in every individual; that they are independent of intellect, and are the principal cause of our actions. In this way, fishermen, who are eminently gifted in natural sentiments, may be better moralists than high priests, mathematicians, orators, or philosophers, who excel only in intellect, and whose moral sentiments are weak compared with their inferior propensities.

An opposite error, but not less hurtful to society than the preceding, is committed by those who despise and neglect the cultivation of the

intellectual faculties. Some religious persons of this kind, have endeavoured to put aside all temporal concerns, and have become hermits. Others avoid all pleasure, or even torture their body, in order to be agreeable to their CREATOR. Others represent a knowledge of the Bible, as a substitute for all other information, in the same way as the Mahometan confines his knowledge to the Koran. Our ignorance of human nature is the cause of such mistakes. The faculties which produce feelings, constitute only one part of our nature; the other part is intellectual, and the feelings work in darkness if not enlightened by the understanding.

Intellectual education too, is frequently misconducted from ignorance of human nature. The basis, however, of the direction of intellect is the same as that of feelings. A plurality of intellectual powers exists, and they are possessed in different degrees of strength by different individuals. The reflective faculties are essential to our moral conduct in every situation; and are necessary to form clear conceptions in all intellectual operations, while the perceptive faculties are applicable only to certain kinds of employment. The reflective powers then should be exercised in every individual.

I have already repeated, that all our learning ought to be useful, and that we should obtain positive notions instead of mere signs, which convey no meaning. Indeed no one has excelled, nor will excel, as a deep thinker, as a great minister, general, lawyer, physician, or moralist, merely because he is a good classical scholar. Great men are no doubt frequently skilled in the classics; and it would certainly be astonishing, if their natural capacities, which enabled them to become great, did not enable them also to become good Latin scholars, seeing that they are obliged to spend more time and labour in learning Latin than in any other pursuit. But it should never be forgotten, that the talent for learning artificial signs is a primitive one, and that it may or may not be combined in any individual with a great endowment of other intellectual powers, and hence that it is wrong to consider it as the standard of understanding in general. It is high time, says Dr. RUSH, (*Essays Literary, Moral, and Philosophical. Phil. 1806.*) to distinguish between a philosopher and a scholar, between things and words. We may be good scholars, and know nothing of man and things. A mere scholar can call a horse or a cow by different names, but he frequently knows nothing of the qualities and uses of these valuable animals. "A

boy of eight years old, with the Latin grammar in his hand, asked his father who made the Latin language, and for what it was made? Another boy, of eleven years of age, wished he had not been born, because of the trouble which he found in learning Latin." It is certain, as Dr. RUSH also says, that many sprightly boys, of excellent capacities for useful knowledge, have been so disgusted with the dead languages, as to retreat from the drudgery of schools to low company, whereby they have become bad members of society.

The exclusive study of the ancient languages has retarded the progress of the arts and sciences. Whoever takes an interest in their improvement must declare against it. Philology ought to be considered as a particular branch of instruction, in the same way as Chemistry, Botany, &c. Useful and practical knowledge ought to be the principal object of intellectual education. During the time we spend in learning the words in which VIRGIL delivers the erroneous opinion, that bees originate from putrefaction, we might learn, with greater advantage, the natural history, treatment, and usefulness of this insect itself. In countries where vines are planted, it is more useful to teach children how to cultivate them, and how to make

wine, than the expression which HORACE employs to inform us, that he liked a good glass of wine. Instead of learning Mythology in Latin and Greek, we had better make ourselves acquainted with the history of the different religious creeds, and of true Christianity, by reading in our mother-tongue. Of what use is it to us to know what words the Greeks used when they spoke, since we never converse in Greek?

Intellectual education may be divided into General and Professional; and in both respects the pupils may be subdivided into several classes, not according to age and time, but according to the objects to be taught, and those to be learnt; for, in point of fact, some children learn double what others do in a given time, and succeed better in one branch than in another. They should remain in each class as long as, and no longer than, is necessary to acquire sufficient knowledge of the branch there taught. There should be one professor for each branch, and each class should be conducted according to the plan of mutual instruction.

I have already laid it down as a fundamental rule, that no sign should be employed without its meaning is explained, and that children should be

constantly admonished, that they use artificial signs as means of communication or recollection, and that sensations, feelings, notions and reflections, precede, and can be acquired only by, the activity of the faculties themselves.

I reckon the knowledge of as many objects and beings as possible, viz. of the three kingdoms of natural history, of their physical and chemical qualities, of the vital phenomena, of history, geography, geology, and cosmography, of anthropology, the mother-tongue, printed and written signs, calculation, and, finally, moral and religious principles, to be essential to a general intellectual education.

Elementary ideas, or outlines of these objects, are sufficient for children ; but during the college education, these branches are to be extended and detailed, but always taught by the way of mutual instruction.

It is a common complaint that arts and sciences do not improve as much as might be wished for. This proves at least that education does not produce talents ; but I think, on the other hand, that Nature has given many capacities which education suppresses. If, for instance, a boy who has

little talent for learning Latin, but great inclination to draw, will, whenever the master turns his eyes away, exercise his natural bias, he will, when perceived, at least be scolded. The consequence will be, that at the end he will know but very little Latin, while his innate talent of drawing has been prevented from being exercised. In this way many children are punished for cultivating their natural gifts, and their intellectual education is impeded. How different would every one be, were he brought up according to his natural endowments. It is really the greatest misfortune for mankind to educate children and youth in an indiscriminate manner; and we may say, that in consequence of absurd views in the selection of the objects taught, and in the manner of teaching, learning has hitherto been tiresome, unprofitable, and even disgusting in no ordinary degree.

The mistakes committed are particularly great in professional education. It is a lamentable truth, that few persons stand in the situations for which nature particularly fitted them. This soldier ought to have been a clergyman; that clergyman a soldier; and here we see a shoemaker who was intended for a poet; and there an advocate who was designed for a shoemaker. The first indication of improvement in this respect will

appear, when human nature shall be better understood ; it will be known that there are natural gifts, that these gifts are different ; that precepts and rules neither bring forth talents nor moral conduct ; that none should be promoted to the degree of a leading man, who is not fit for the station, and that he who is fit for one place is not on that account necessarily fit for all others.

There is an example on record, which proves the importance of employing every one according to his talents. The society of the Jesuits rose in a short time to an extraordinary height and influence. Several causes contributed to this result ; but the principal one certainly was, that they were employed in conducting education, distinguished the genius of their pupils, chose for their order only those who excelled in talents, and employed each individual according to his natural dispositions. No society will acquire an equal influence that expects to do so from teaching alone.

Moreover, their regulations were calculated to contribute to their excellence. They were under a leading general, who nominated without control all functionaries of the order, and could remove them at pleasure. To him the reports of

the subordinate societies were submitted. These reports were minute and circumstantial in the highest degree, containing exact information of the characters of the novices, and professed members, their talents, dispositions, and prevailing tendencies, and, above all, their knowledge of human nature, and experience in affairs. Thus, the general could appoint to each man his station and his reward, could elevate and degrade, exclude and retain, and allot the chief duties to the highest abilities.

I am far from defending this society and its tendencies. I argue only in favour of their sagacity, in employing every member according to his abilities.

If every one were employed according to his natural gifts, a double advantage would result: arts and sciences would be cultivated with more success, and many persons would be better pleased with their station in life. It is certain, that it is not always the profession to which we are forced by circumstances, that makes us happy. Many would be satisfied with a smaller income, if they were allowed to follow their natural bias. Even people of independent fortune are still dependent

on the general arrangement of education. They are drilled for years, and soon forget that which they learned by compulsion.

The second error of professional education is, that we are plagued with a great deal of useless knowledge, while the most important objects are overlooked. Of what use is poetry or mathematics to a clergyman, while his attention is scarcely called to human nature, and to the organic conditions on which the manifestations of the mind depend? None of the unprofitable studies ought to be compulsory. Yet as every kind of knowledge is useful, no branch of it should be neglected, and therefore Latin and Greek might, with propriety, continue to be taught, if we make it requisite for those only to learn them who have the inclination to do so, or whose professions require such knowledge. No one can learn every thing, and it is wrong to oblige pupils to learn that which is useless in their practical situation in life.

The third error of professional as well as of general education, consists in the method of teaching. It has been examined in the preceding pages, and I mention it once more for the sake of connection. Children learn languages without

ideas, and natural history by mere descriptions ; and those who teach them in this manner, if they think at all about the matter, must proceed on the belief that every word communicated necessarily excites, in the mind of the pupil, the idea which they mean it to convey. This, however, is an extravagant error ; for words can excite only ideas already acquired, and if no previous ideas have been formed, they are mere unmeaning sounds. The same error is committed in professional education. In the study of medicine, for instance, we are frequently told a great deal about various diseases ; of external appearances ; of different conditions of the pulse or skin, &c. before we see such things in nature. The result is, that the time and labour we spend in acquiring such theoretical knowledge are, in a great measure, lost. Let us first see Nature, and then hear descriptions. A medical student, who has never seen a patient, but studied the theory of diseases, will be as little acquainted with them as with minerals of which he has only read the descriptions.

Thus, in the study of medicine, it is not only wrong to compel the students, as is the case at certain universities, to learn the auxiliary sciences in detail, such as mineralogy, botany, zoology and chemistry, since a perfect and practical

knowledge of each of these branches would require several years; but it is also a great error to begin with theoretical lectures.

Moreover; the individual branches of medical education are too much separated. The instruction begins commonly with anatomy, without the pupil being taught to think of the use of any particular part. At certain universities, they spend the greater part of the time in studying osteology and myology, (the knowledge of the bones and muscles); they must learn the name of each bony ridge and edge; but may hurry over, with very superficial notions of the viscera and nerves, which certainly are more important to medical practitioners in general than those of the bones; whilst operative surgeons alone stand in need of a very exact knowledge of the bones and bloodvessels.

Physiology and anatomy ought never to be separated from each other: the structure will be learned with more ease and pleasure when at the same time its uses are taught. On the other hand, students ought to begin with the more necessary functions, and go on to those of less importance. When well acquainted with anatomy and physiology, they ought to see patients, and the different morbid symptoms; they should learn to distin-

guish diseases, to become attentive to modifications according to age, temperament, climate, season, and manner of living, and to learn the mode of treatment. Being instructed in this practical way, they will feel an interest in studying the *Materia Medica*, or the substances used out of the three kingdoms of nature, and also the chemical preparations and doses.

When human nature shall be better understood, and the primitive faculties of the mind, and the conditions of their manifestations, more perfectly known, professional education will be better regulated, and we shall then no longer be obliged to learn merely for the school, or, as we commonly say, for the examinations. We shall then acquire only practical knowledge, and no one will find it necessary to begin his own plan of useful learning when he has finished his studies at the university. Indeed, nothing can be more tedious for students, than to attend *ex officio* lectures of mere theoretical schoolmen.

Here the qualifications of teachers might be considered with propriety; they are certainly of great importance, but it is not my intention to speak of them. Pupils are well aware, that great abuses are committed in this respect; that it is

not always the most worthy who fills the chair. I merely notice, that there is a difference between the possessing of knowledge and the capacity of communicating it to others, and that some persons of more knowledge are sometimes less skilful in teaching, than others of less information, in the same way as the best students of theoretical knowledge have not always the most practical skill.

The common method of teaching arts is not better than that of cultivating sciences. Let us suppose, for the sake of example, that those only who have natural talents apply themselves to drawing, painting, and the arts of imitation,—but we may ask, how are they generally taught? They are too frequently confined to copying the antiques as the only models of beauty and perfection, instead of representing and imitating nature. In this way artists will be only copyists, and never can acquire any claim to originality. On the other hand, the ancients had no exclusive privilege of genius, nor did they necessarily exhaust all the sources of excellence, so as to leave to posterity no resource but to copy them. On the contrary, there are many antiques that have no merit but their age. The only criterion, then, of greater or less perfection in works of art, is

their resemblance to nature. Now, if the ancients have brought forth masterpieces in imitating nature, why should not modern artists do the same, since nature, though infinite in her modifications, is constant in her laws? Let us imitate the method of the ancient artists, but not copy their productions. They represented nature, and imitated her varieties; they gave to each strong hero, strong muscles, yet different in proportion and size, just as we find in nature; why should our artists copy only the statue of **HERCULES**, in order to indicate bodily strength? Why should they in general confine themselves only to one and the same configuration and attitude for particular personages? All musicians might be equally, and, with the same right, requested to follow only the productions of one or several great composers; and all music which is not like that of **HANDEL**, **MOZART** or **HAYDN**, be declared to be good for nothing.

Even on the supposition that education, in all its details, is well understood, and its principles practised, still there will be but a few individuals, who will unite all the faculties necessary to such or such a situation. The individual painters will be rare, who possess in a high degree the faculties of Constructiveness, Configuration, Size, Co-

louring, Imitation, Individuality, Comparison, and Causality. The same difficulty of uniting the necessary fundamental faculties together prevails in all arts, sciences and professions. In every one there are and will be individuals endowed with one or several of the necessary gifts; but it seldom happens that all the faculties are united in an eminent degree in one person. The combinations of the primitive powers are innumerable, and form the proper subject of a particular treatise on talents and characters.

The reader will keep in mind, that in this volume, I intend merely to expose the fundamental principles according to which education is to be regulated, and the human race perfected. The peculiar applications are without end. The two following chapters, however, one on the education of both sexes, and the other on that of nations, seem to me particularly interesting. Yet there too the general principles remain the same, but their application is to be modified, and adapted to the peculiarities of sexes and nations.

CHAPTER V.

EDUCATION OF THE SEXES.

THE question, whether both sexes are to be educated differently, or in the same manner, and placed in different or in the same situations in practical life, has been, and is still differently answered. Women call men usurpers and tyrants; and these, on the contrary, boast of natural and positive rights of superiority. I shall consider, in the first place, in a general way, the condition of women as it was, and as it is, and then examine what natural claims they have to equality. Their education is to be regulated according to the determination of the latter point.

The condition of women is very miserable among barbarous nations; they are slaves. Wherever bodily strength and animal feelings predominate, they are sadly off. They are purchased, and divorce is permitted. The Jews were privileged to divorce their wives. (Deut. xxiv.)

Among civilized nations, as long as the code of morality is dictated by the lower feelings, females are looked on as means of gratifying the selfish passions of men. The ancient Greeks and the European nations, during the dark ages, treated them with every indignity. Polygamy is intimately connected with the custom of purchasing wives. It prevailed originally every where, and exists still in many countries. In China, the wives are sold at marriages, and not permitted to make any choice of their own. By polygamy, however, some men usurp the right of others, a custom which is contrary to nature, since more boys are born than girls; or are we authorized to admit that the contrary happens in Asia? The pure spirit of Christianity abolished this odious practice, and re-established the primitive law of the CREATOR.

The female sex has risen by a slow progress to higher and higher degrees of estimation in Europe. Females are respected wherever moral feelings are esteemed. Where this is the case, they are valued as friends; but still they are either considered as weak and delicate creatures, and assisted, since it is thought a duty to compassionate and to succour the feeble, or they are treated as simple and useful housewives.

Where a taste for beautiful forms and elegance of manners prevails, the females are considered as agreeable companions, and often become mistresses.

Women are best treated, when polite manners and moral feelings are cultivated. Then they live with men under the decent form of matrimony. Their gentle and insinuating manners are highly appreciated, and they are considered as intimate and faithful friends.

Yet there is no society where the two sexes stand altogether in an equal situation. Is this difference founded on nature, or the result of the selfishness of men? Women speak of vindicating their natural rights; they call it tyranny to deny them a share in civil and political affairs, to force them to remain immured in their families, &c. MARY WOLSTONCROFT has taken great pains to show, that both sexes are by nature equal. She was obliged to admit the actual inferiority of her sex; but still she endeavoured to prove, that women are degraded only by want of education, and by external circumstances; and that men, through jealousy, purposely neglect the cultivation of girls. Male writers, on the contrary, maintain, that nature has made the two sexes

different, though concordant, so as to produce together a delicious harmony; that she has prepared them for their future destinations, by a particular modification of feelings and intellectual faculties given to each, and avoided rivalry between them, by giving them different dispositions.

It is to be understood, that I do not speak of single individuals. There are women who resemble men, and *vice versa*. MARY WOLSTONCROFT speaks of her own manner of feeling and thinking, which resembled that of a man. She contends particularly for the power of generalizing ideas, of drawing comprehensive conclusions from individual observations, a power which seems to her the only requisite of an immortal being; a power which is commonly denied to women, and often considered as inconsistent with the female character. I allow that this power exists in some women stronger than in many men; but MARY WOLSTONCROFT would accuse herself, and speak against her sex, if she would draw general inferences from her own individual feelings. As I am of the decided opinion, that the two sexes, in the actual state of things, are naturally different in their dispositions, I shall contrast

them in a summary view. They possess essentially the same powers of mind, the whole difference consists in the degrees in which they have them.

The form of the female body is rounded, and indicates rather delicacy and beauty than strength and solidity. "Let us be allowed," says MARY WOLSTONCROFT, "to take the same exercise as boys, not only during infancy, but also during youth, and we shall arrive at the same perfection of body." I admit, that in girls, confined to close rooms, and prohibited from taking sufficient exercise, the muscles are relaxed, and the digestive powers destroyed. It would certainly be advisable to take the greatest care of the bodily constitution, and to adopt a manner of living which would secure females against the immense train of nervous complaints that afflict them under the present system; but I am also fully convinced, that although the same physical education were given to the muscular system of both sexes, each would preserve its peculiarities, because the functions, those at least which characterize the sex, are different in each. Country people furnish a certain proof of the truth of this assertion, boys and girls are brought up in the same way, but it

is superfluous to say which sex is the strongest, and which has recourse to the other when muscular strength is required.

Farther, women are exposed to many little disorders unknown to the male sex. In fulfilling their duty as mothers, they are exposed to great sufferings, and causes of weakness. Mankind is treated in this, as in many other respects, like all viviparous animals. Though the manner of living be the same in both sexes, the females are smaller and weaker than the males.

Some of the feelings necessary to the preservation of the species are stronger in men, and others of them stronger in women. In animals, the male pursues, the female yields, and so it is in mankind. Among all nations men court, and women are courted. As to the love of offspring, the two sexes shew a decided difference. Female children delight to dress and undress a baby, to take every possible care of a doll, to get an infant in their arms, to carry it, to sing and to walk about, staggering under the weight. Boys seldom think of such a pastime. They have more inclination to noisy amusements, to run about, to ride upon a stick by way of a horse; they delight in a top, a ball, a drum, &c. Since the suckling mo-

ther must stay with the child, and provide for its wants, nature has taken care that she should be pleased with doing so. Indeed many mothers have this feeling too strong, they cannot manage their children properly; they spoil them, become unjust towards other persons on their account, and sacrifice truth and every thing for their sake. This is seldom the case with fathers; they are commonly obliged to inflict the deserved punishments, and to be the judges in all disputes.

MARY WOLSTONCROFT denies, that women from birth, independently of education, have a fondness for dolls. She quotes her own feelings, and ventures to affirm, that the doll will never excite the attention of a girl, unless confinement allows her no alternative. "Girls and boys," says she, "would play harmlessly together, if the distinction of sex were not inculcated long before nature makes any difference." MARY WOLSTONCROFT is very wrong to take herself as the standard of her sex, while general observations show, that throughout nature the love of offspring is stronger in females than in males.

Another feeling more energetic in women than in men, is Attachment. This feeling is not the result of their weak state, but is given by nature.

Many women have sacrificed to it their happiness and welfare. Females commonly wish to possess, exclusively, the friendship of others, and often complain of the want of friendship in men, since they are not so exclusively governed by it. The circumstance of this feeling being so energetic and prevailing in women, is an additional motive why seduction should be more severely punished. I fear that many legislators wink at this crime, from the circumstance of their not being themselves so prone to strong attachments as women.

There are still some other feelings more active in women than in men, which essentially enter into the formation of the female character. It is, however, difficult to say whether they contribute to their happiness, since it often happens, that, if they be not satisfied, they become sources of unhappiness to them.

One of the most prevailing sentiments of females is the Love of Approbation. They show it from their earliest infancy in dressing, walking, speaking, &c. &c. They are constantly desirous of knowing what others say of them; they are fond of distinctions of every kind, of decorations and external show. Young girls, who are scarcely capable of understanding what is said of them,

may be governed by talking to them of what other people think of their behaviour. This motive has not the same effect with boys. Many females are intoxicated by the love of approbation, they cannot distinguish true merit from false flattery, nay, they would be pleased with adoration. They try to make impressions on others by various means. Some would suffer pain in order to be pitied, rather than remain unnoticed.

No man will object indiscriminately against the feeling which causes a desire of pleasing ; it is the source of many pleasures in society ; but its too great activity, combined with some other sentiments, and not directed by reflection, makes many women weak and fastidious, or mere objects of amusement, by their pretty nothings and infantine airs. It is still worse, if such fine ladies be full of capricious fancies. Females who are governed only by this feeling, will remain alluring objects for a moment, but they will not obtain a durable interest in the affections of a sensible man. It follows, that the sentiment of the love of approbation being in general too strong in women, does not stand in need of being exercised ; it only requires to be directed.

Females naturally have less courage than men, and more circumspection. Fear, therefore, ought not to be cherished in them; but it ought to be treated as cowardice. To fear a cat, a mouse, an insect, a little noise, &c. is irrational, looks infantine, and indicates altogether a false susceptibility of mind, or a too great nervous irritability. The ardour with which some females amuse themselves in hunting, shooting, and gaming, appears, on the other hand, equally objectionable. In short, while coarseness in females is to be avoided; delicacy and refinement of taste must not be confounded with weakness.

The conduct of females, in general, is unstable; their opinions are often wavering; they think too much of incidental occurrences; of actual events; they wish to enjoy immediately; are moved by momentary impressions; do not like to work for a future period; while men have more frequently the end in view. Females undertake many things; they are warm by fits and starts, but their warmth is soon exhausted.

Indeed, hitherto the greatest enemies of the female sex reside in their own feelings. Many civilized women please, rather than inspire with respect. They prefer alluring manners to perma-

nent friendship. Many are charming, romantic, vain, or fine sentimental ladies. They are occupied with trifling things, mere beings of sensibility and pleasure, refined by novels, poetry, and gallantry ; but they should never forget, that they will always be considered as insignificant when they wish only to be fine ladies, and not to fulfil the duties which nature has assigned to them.

Thus, the feelings and their combinations in women, tend much to make them dependent. To be independent, it is not sufficient to be endowed with the feeling of duty and justice as principal motive ; these must also be combined with indifference about the opinion of others when unjust, with courage and perseverance, in order to resist difficulties and obstacles, and to attend only to the aim, and to think of the necessary means.

In order to understand perfectly the great phenomenon observed at all times, that one half of the human species has excluded the other half from all participation in government, it is necessary to compare also the understanding of the two sexes.

The intellectual faculties, though, like the feel-

ings, essentially the same in both sexes, are widely different in power in the two, and men undoubtedly enjoy the superiority. I by no means say, that women are made to be the toys of men, much less their slaves; and I wish that their understanding may be more cultivated than it usually is. But whoever will attend to female education, will find that they acquire many notions of individual things; that they excel in the recitation of anecdotes and descriptions of manners, in the epistolary style; that they are admirable in details, but dwell on effects, without tracing them back to their causes. In arts and sciences females rarely show themselves masters, they most commonly remain apprentices. Those female authors who defend their sex, maintain that their education is neglected, and that on this account alone they are inferior, for they are all obliged to admit the actual inferiority of the fair sex. Yet there can be no doubt that more girls than boys learn music, drawing, and painting, and that many females cultivate these arts exclusively. Why then, we may ask, do their compositions so rarely equal those of men? Whenever great combinations, deep reflection, discrimination, and general abstraction are required, when principles and laws are to be established, females in general remain behind.

Thus, there is a natural difference between the two sexes, not in the number, but in the degrees of the primitive powers of the mind. Some are stronger in women, others stronger in men, and both sexes seem to be destined to different occupations in society. Indeed no education will change the nature of the innate dispositions. Let, then, each sex, and each individual, be cultivated and employed in those things for which he is fit. The claim to justice is equal in man and woman; their duties only are different. Females are not destined in any circumstances to be slaves, or mere patient drudges, nor are their duties limited to those of chaste wives and good managers of their families only; women are required also to direct the education of their children, and to be agreeable and intelligent companions to their husbands. Let their understandings, then, be cultivated by useful knowledge; by the study of the human mind, and the principles of education, and of their duties in the direction of their families; let their intellect be improved by the study of history and of arts and sciences. Girls commonly learn only objects of secondary importance, mere accomplishments; and hence, when they arrive at the age of being united to a husband, they are seldom capable of supporting permanent friendship, by the elevation of their minds, and

the steady practice of the domestic virtues. They do not know how to guide themselves, and still less their offspring, their servants, and household affairs. Indeed, if the fair sex go on as they have done hitherto, they cannot repine that they have no share in political concerns. If their minds do not take a more serious and more solid turn, they may govern in drawing-rooms, where delicate feelings and polite manners are attended to, but they will have no permanent influence on society at large.

I beg leave, however, to repeat, that I admit individual exceptions, and speak only of the sex in general. I even think, that legislators are wrong to take it for granted, that the intellect of men is, in every case, superior to that of women. Some females contribute more than their husbands to the fortune of the family: Is it then not unjust to permit the husband to spend what the wife has gained, and to deprive her of power, when, in point of fact, she might manage affairs to the advantage of her family and of herself?

I, however, cannot perceive any arrangement of nature that can lead me to expect, that women will cease soon to be considered as subordinate to men. Let them endeavour, if they please, to

acquire the same degree of talent, energy, and perseverance; but, till they have acquired it, let them cherish order, and exercise the virtues of their actual condition in society, rather than attempt to rise into a sphere for which they are not at present fitted.

CHAPTER VI.

EDUCATION OF NATIONS.

THE first idea that presents itself in this Chapter, is to inquire who, according to the laws of the CREATOR, is intrusted with national education, this being taken in the most extensive signification of the word. In treating of the education of children, I took it for granted, that parents are their natural protectors and leaders, and that they ought to consider it their duty, to favour the happiness of their progeny. On the other hand, parents, being free agents, are to be declared answerable for their influence on their offspring.

Nations and governments are often compared, the former with children, and the latter with pa-

rents. The analogy, however, is very inaccurate; nations never owing their existence to their governors. This comparison is further objectionable, since nations always provide for the living of their rulers. It seems therefore more reasonable to think, that individuals unite under determinate conditions for the sake of the common good; and submit, on that account, to an appointed leader or director. But who could fancy that this submission can be agreed to at the expense of the general welfare?—The sovereignty of nations seems evidently to be a law of the CREATOR, and will be acknowledged in proportion as men become intelligent and virtuous.

Yet, let us suppose what governors like to persuade mankind: that they exist by the grace of God, viz. allowing this to be in the same way as every arrangement is made, and every kind of order is established by the will of the CREATOR; but let us add the question, whether GOD, the Father of all, according to reason and Christianity, could establish civil and religious governments for the sake of any absolute power and private pleasure, independent of general happiness?—Reason says, that wherever there is a community, its aim can be the public good alone. This principle prevails as regards families, tribes,

nations and mankind at large. Christianity teaches the same doctrine. JESUS CHRIST, instead of assigning privileges to his disciples, abolished all personal supremacy and prerogatives. "Ye know," said he, "that the princes of the Gentiles exercise dominion over them, and they that are great exercise authority upon them;—But it shall not be so among you, but whosoever will be great among you, let him be your minister, and whosoever will be chief among you, let him be your servant." (Matt. xx.) "The disciples had disputed among themselves who should be the greatest; and he sat down, and called the twelve, and said unto them, If any man desire to be the first, the same shall be the last of all and servant of all." (Mark ix.) He ordered them to be peaceable, humble, charitable, and satisfied with their daily bread. The following text, "Render unto Cæsar the things which are Cæsar's, and unto God the things that are God's," (Matt. xxii.) commonly quoted to prove that Christianity is not against absolute rulers, bears, in my opinion, a more sound interpretation than is commonly given to it. CHRIST imposed upon his followers a new code of morality, which was the will of his heavenly Father, and incumbent on all his disciples, Jews and Gentiles: one of its great commandments, applicable to all members, is to love our

neighbour as ourselves. Now, I doubt, whether common sense can allow privileges compatible with such a doctrine? If we maintain that JESUS CHRIST sanctioned absolute power, because he did not interfere with it; it may be said, with equal propriety, that he sanctioned every state of things, he did not mention. Is it not a natural consequence of his doctrine, that those who follow it, change their former manner of living, and abandon the abuses of preceding ages? at all events, even those who consider GOD as the true legislator, and themselves as the directors appointed by his special grace, must acknowledge that the aim of Christianity is the general happiness of mankind, and that all notions opposed to that cause, must be abandoned.

The reader, then, may easily suppose, that I do not intend to examine the means favourable to governments, in order to dispose nations to be satisfied with the good pleasure of their rulers, to keep them in ignorance and poverty, to force them to passive obedience, and employ them to mere selfish purposes, in short, to enslave them; on the contrary, my object is evidently to speak of the means which may enable governments to fulfil the only reasonable and moral destination of their existence. I take it for granted, that general

welfare is the object of national education, and go at once to the inquiry how this is to be obtained.

In national education as in that of individuals, the same principles prevail. Those who wish to contribute to this great work must always remember, first, that they cannot create, but are confined to the laws of the Creator; hence, that they can produce certain effects only under conditions; secondly, that the faculties of the mind are innate, and that their manifestations depend on the cerebral organization; thirdly, that the special faculties of the mind are essentially the same, but more or less active in different nations; fourthly, that man acts from feelings rather than from intellect; and finally, that the feelings in themselves are blind, and that their actions must be regulated by reason. Convinced of these principles, they may endeavour to increase or diminish the activity of the individual powers, and direct them towards the aim of society.

With respect to the general preliminary principles of national as well as individual education, I refer to my other publications, where these points are examined with details; even in treating of the means necessary to obtain the desired effect of national education I may be short, since they

are the same as those explained in the preceding chapters.

Among the means of improvement, propagation occupies the first place, and crossing the breed is the surest way of changing races. Foreign invaders, who intermarried with the old inhabitants, have greatly contributed to change the character of different nations; and new settlers who mix with the natives will be of greater effect than all sorts of other regulations. The northern provinces of Ireland are inhabited by Scotch, and by a mixed race of Scotch and the primitive inhabitants; their character is known to be different from that of the Leinster people, and their cerebral organization is not less so. Tribes, by attending to the laws of hereditary descent during several generations, might be modified with greater certainty than by theoretical instruction in reading and writing, by hearing sermons and repeating prayers. Granted that governments have no right to force nations, except in conformity with the established laws; they may, however, if they really mind the welfare of the people, inculcate the natural laws of hereditary descent, and find various ways to favour their practice. Careless tribes ought to intermarry with cautious persons; fearful with courageous; gloomy with gay, &c.

Natural morality and Christianity command nations to live in peace, and by crossing their blood, their faculties of body and mind may be strengthened and improved. The principle, *Make the tree good and it will bring forth good fruit*, is undeniable.

Thus, the knowledge of the laws of hereditary descent being the first and surest means of improving nations, deserves the attention of legislators and governors: it embraces the conditions of innate strength of body and mind; the causes of degeneration; the propagation of hereditary diseases; the number of inhabitants, or population; and the regulation of marriages. A military government, that institutes the conscription, such as it existed in France under the reign of Buonaparte,—that carries on war for several generations, and distributes all the honours only to soldiers,—is the greatest curse to a nation. Degeneration will be unavoidable, since all the better heads are sacrificed and the inferior allowed to propagate. On the other hand, when all inferior moral and intellectual organizations are employed as soldiers, and prohibited from marrying, the military line may be very useful to society. Hence, if standing armies be necessary, take up in preference those who enlist from laziness and dis-

orderly habits, and who are under the influence of the lower propensities.

I think it necessary to add, that it is by no means my intention to degrade the military profession; I acknowledge its usefulness and merit in time of necessity, as in a war of defence against foreign aggression. I even admit, that in order to resist with vigour, every member of the community should be exercised in the use of arms, and be obliged to defend his country in case of attack. The number of degenerated brains will always be small in proportion to the great bulk of the nation; they will be easily kept in order, partly by the regular behaviour and good example of their companions, partly by the severe laws of military discipline. Their number will also diminish by degrees, when all the principles of national education shall be practised. The great weight I lay on this proceeding depends on the means of purifying the race, by preventing the inferior organizations from propagating. The transportation of degenerated subjects may also be of great benefit to the mother country.

The next object of national education concerns what is commonly styled physical education, or the regulation of the vegetative functions. It in-

cludes the salubrity of air and light, cleanliness, food, clothing, bodily exercise, in short, corporeal health and strength, these being indispensable conditions to personal happiness and public usefulness.

In this respect, too, a good deal more than generally is might be done; in taking for granted that governments never act from selfish views, but always with the intention to favour the public good, since they are aware that they themselves die, whilst their nation continues and may be everlasting, and that therefore they calculate their measures not for momentary advantages, but for permanent results. This latter point, however, is too often neglected, though it is a characteristic sign of greatness in a legislator, if his regulations be lasting, viz. adapted to nature and her manifestations.

The preservation of bodily health and strength is of greater importance than legislators commonly imagine, and its neglect during several generations may greatly contribute to the fall of a nation.—Overgrown towns, capitals in general, after several centuries, would die out, if the inhabitants were not renewed by people from the country. In the same way whole nations may be weakened by va-

rious causes: they may degenerate, lose their energy, grow old, as it is commonly expressed, and become incapable to resist foreign invaders. Hence, whatever besides the innate dispositions of the body and mind, concerns the salubrity of habitations, the purity of air in the streets and houses, food, cleanliness, bodily exercise, &c. belongs to the scope of legislation. This chapter is vast, and includes every point conducive to health and strength.

In this as in any other respect, nations, like children, do not always understand what is the most advantageous to them. They are too often satisfied with temporary amusements, and neglect the conditions of permanent happiness. Legislators, therefore, be they hereditary and permanent, or chosen and temporary, might and ought to lead the community, and prepare their happiness, in the same way as parents provide for children.

The views which governments entertain of their right to interfere with the personal liberty of the people, are sometimes very singular. They often show indifference about things which do harm to individuals and to the whole of the nation, and punish as crimes disorders which are of little consequence. They may wink at debauchery, drunk-

enness, gluttony, luxury, &c. and bestow the right of hunting as a privilege ; they fix the quantity of wine which may be carried from one cellar to another, and inflict a penalty upon the transgressor, but license numberless ale-houses ; they grant only a small quantity of gunpowder to be kept in private houses, but tolerate gaming-places and lotteries ; they force the individuals to be sailors or soldiers, but have no authority to propagate vaccination ; they oblige medical men to study anatomy, and inflict upon criminals the dissection of their body as a punishment, &c. ; they allow the poor to multiply as they like, and force the rich to nourish the poor and their progeny, &c. Who does not perceive that they never hesitate to interfere in whatever answers their own purposes, always under the pretext of the common welfare, but that they have no right to restrain the personal liberty in whatever is indifferent to them. It seems to me that, among civilized nations, every interference of the government should be allowed which tends to the common wealth, and which is obligatory for every member of the society. Personal exceptions are unjust, they weaken by degrees the force of the laws, and at last destroy their efficacy.

The regulations concerning habitations and nou-

ishment are of prime influence. The situation must be healthy, the air pure, its circulation free ; hence the streets large, the houses not too high, the abodes and walks freed of every sort of ordure ; dunghills and filth at a certain distance from dwelling-places and public roads. In short, it is necessary to enjoy cleanliness of every description, and pure air in every situation.

Nourishment must be adapted to the constitution, age, occupation, climate and weather. Nothing is wholesome or unwholesome in itself. In northern countries, and in cold weather, animal food is more easily digested than vegetables ; these latter, on the contrary, agree better in the south and in hot weather ; whilst a mixture of meat and vegetables favours best bodily strength in temperate climates ; but whenever animal food is well digested, it gives more strength to the body, and then vegetables, by feeding and multiplying domestic animals, should be changed into flesh, before they serve to nourish man.

Temperance and sobriety greatly invigorate the body and mind ; intemperance and debauchery, therefore, should be restrained by all possible means. The natural wants are to be provided ; and as Christians pray only for their daily bread,

objects of refined cookery might be imposed with enormous duty, and drunkenness considered as a civil fault.

As bodily exercise particularly strengthens, as it invites to sleep, and secures against great disorders, it is to be generally encouraged. Gymnastic amusements may be established for all ages and for all classes of society.

Idleness, the great source of personal dissatisfaction and of many faults and crimes, should be declared a moral and civil vice, and as such prohibited. Every one should be obliged to exercise a profession; mendicity entirely forbidden; and every citizen honoured in proportion as he contributes to the welfare of his fellow-creatures.

Here a difficult matter presents itself concerning the poor and charitable institutions. The feelings are blind, and temporary relief of a feeling may do permanent mischief. This seems too much the case with charity. The poor are undoubtedly a burden to themselves and to the community at large; I find, therefore, whatever contributes to increase their number objectionable, charitable institutions not excepted, since in providing alimentation for the poor they encourage

their propagation. It is not my object to examine this matter, but I admit, with all enlightened politicians, that the number of population depends on the means of alimentation, though it cannot be said that the most populous countries are the most happy. I also refer the reader to the chapter on happiness, in my work on the Philosophical Principles of Phrenology, to make him understand my manner of thinking. I here confine myself to state the reasons which induce me to blame the obligation to provide for the poor. It is generally unjust to force others to work for our welfare; and if the government think it right to prevent me from doing so with others, there is no more right to oblige me to nourish others, or to work for them. All donations of this kind should be voluntary. Governments may excuse this injustice by the public order and welfare, but would they not act more prudently by removing the causes of misery than by increasing the number of the miserable? As general welfare is the aim of society, and as the poor-laws and charitable institutions augment the mass of misery, benevolent and charitable persons will do well to reflect and reason before they act, in order to bring their feelings in harmony with reason. It is a well known fact, that charitable institutions of any kind never diminish the number of those who

stand in need of assistance; hence they give rise to permanent harm. Their nature should be changed, and it might be taken as a leading point, that public institutions are to be abolished, if they augment public misery, and to be encouraged as far as they diminish misery and establish general happiness. Public schools where useful knowledge is taught, institutions for blind or for deaf and dumb, and hospitals for unforeseen accidents, are of the latter kind.

As sufficient alimentation is the first condition of our preservation, and as parents are bound by nature to bring up their children, those who cannot provide for a family should be prevented from propagation. On the other hand, as idleness and mendicity are civil faults, charitable institutions should be houses of correction or penitentiaries. The lazy might be confined, instructed, educated, obliged to work, and kept till they can provide for themselves.

Again, as many occupations in society are hurtful to health, they must be superintended, particularly if youth be employed therein. Children, for instance, brought up in factories and hot rooms, unavoidably degenerate, and become sources of future misery.

The consequences of idleness and poverty being deplorable, activity and industry are to be patronized. Yet also this proceeding is not without inconveniency. Besides the misery which attends the working classes, in proportion as they degenerate, the happiness of the families who enrich themselves by industry and commerce is never lasting, since riches invite to luxury, and luxury occasions many evils of body and mind in individuals and nations. I grant that, in the actual state of things, luxury has the advantage of bringing money into circulation, and this ought to be attended to as long as great riches are collected. But the mischief begins if the owners spend above their income, or if they look out for gain by every means. In this way, a too great anxiety about riches, as well as great poverty, do harm.

Two important ideas concerning riches may be examined: 1. Great wealth is neither sufficient nor necessary to personal happiness; and, 2. Riches alone do not secure the duration of nations any more than that of families.

The first idea is confirmed by daily observation. A greater number of persons understand to make a fortune rather than to enjoy it; and whilst they collect and work, they are commonly happier and

more satisfied than when they give up business and live in retirement. Personal happiness depends on health, and health on temperance. Now this virtue only requires a moderate income, which may be procured by a moderate exertion. This state again protracts the necessity to work, and keeps up an essential condition of happiness, which is no more possible without occupation than collecting wealth without activity.

The second idea is equally certain, and confirmed by history. Monarchical governments, therefore, who want a court and splendour, keep up rich families by primogeniture, and hitherto they endeavoured to preserve their nation by poverty and ignorance. The examination of this subject belongs to political economy, a science destined, in my opinion, to discover means not only of collecting wealth, but of securing property.

This object is interesting both in a moral and political point of view; and here we find a new example of justice being inseparable from the general and permanent happiness of mankind. Rich families left to themselves degenerate. Now is it not evidently a great injustice, that degraded children enjoy wealth, whilst active and intelli-

gent members of society are deprived of the possibility to ameliorate their situation, as it happened under the feudal system? The bulk of a nation living in that state is miserable, and the resources of its government are exceedingly small.

On the other hand, if landed property remain in the possession of a few families, by the law of primogeniture, whilst others can enrich themselves by industry and commerce, the number of independent persons increases, welfare and comfort become more general, and the pecuniary resources of the government grow in the same proportion. Yet the injustice of primogeniture, and most likely the degeneration of families, will continue.

But justice is accomplished, personal happiness procured to the greater number, and the greatest advantage secured to the government, if all sorts of privilege be banished, every individual allowed to employ his talents, and to earn the profit of his labours and to spend his property as he pleases. Under such circumstances individuals and families will disappear, but the nation will flourish and last. There will be talents in abundance; active and intelligent citizens will collect riches, and lay great weight in the balance of national property and resources.

Natural talents and dispositions being different, there can be no equality except that before the law, which is the same to all, and equally protects the poor and the rich ; which allows to every one the use of his powers, rewards personal merit, and makes every transgressor answerable for the disorders he commits.

Those who take interest in the duration of public prosperity, will highly appreciate riches, and acknowledge the great influence and power which they bestow on their possessors, be these single individuals or nations. But governors will find, that, to produce the desired effect, besides riches, many other conditions concerning body and mind must be attended to, and just the same as are necessary to the improvement and preservation of individuals. They will seriously reflect on what Lord BACON said to King JAMES, of the true greatness of Britain, viz. that in the measuring or balancing of greatness, there is commonly too much ascribed to largeness of territory, to treasure or riches, to the fruitfulness of the soil or affluence of commodities, whilst the true greatness requires a fit situation of place, and consists essentially in population and breed of men, so that every common subject should be fit to make a soldier.

The influence of public institutions is conceived and should be conducted according to the laws of exercise, (as explained above, Sect. I. chap. iii.) Institutions in order to produce effect must be lasting; but every sort of institution, if continued for generations, will accustom whole nations to certain manners of feeling and thinking, and strengthen the special and individual powers of the mind.

In examining this subject, the following propositions may be laid down as principles. Nations, as well as individuals, act from feelings; feelings do not result from intellect, nor intellect from feelings; and every faculty, in order to be exercised, must be put into action. It may be added that, generally speaking, the selfish feelings are strong enough, and scarcely need any exercise, whilst those destined to forward the public happiness are commonly weak;—farther, that lessons and sermons never suffice to root out strong feelings, and seldom hinder their disorderly effects;—finally, that natural means may be employed with peculiar advantage, in order to increase, diminish, or prevent the activity of any fundamental faculty.

As to the objects to be taught, two general remarks may be made: it is a great error to confine

education to intellectual instruction; and, secondly, it is wrong to attend rather to theoretical than practical knowledge. Ignorance is certainly a fertile cause of error, but society at large will derive greater benefit from moral improvement than from scientific acquirements. Theoretical schoolmen, I am sorry to say, are too much attached to intellectual instruction, and not enough to the progress of moral conduct. Intellect, however, furnishes means to gratify the animal nature, as well as the nobler feelings of man. There should be schools for infants, children and youth, where positive notions of things, their usefulness and means of improvement, are communicated by the way of mutual instruction, and where, at the same time, morality is shown in action and imposed as a duty. I hope the time will come, when every one will learn to read, to write and to cipher, in order to be able to acquire new notions, to teach others that which he knows, and to assist his recollection; when all knowledge, extended according to age and particular classes of society, will be practical, from the most common notions of household affairs and agriculture, to the deeper conceptions of arts and to the principles of sciences; when, at the same time, the feelings will be exercised and their actions regulated according to the principles of morality; when

nothing will be taught or learned merely for the school, but every thing in reference to universal happiness; when the religious feelings will be cultivated in every one, not by words but in deeds, not by superstitious formalities, but in harmony with reason and with the intention to improve the fate of mankind; finally, when even the animal feelings will not be neglected, but only employed as powerful means to assist the faculties proper to man, which alone are the aim of our existence.

From the preceding remarks it follows, that the principles of excitement are the same for governments as for parents. The same rule holds out with respect to the direction and employment of the special powers. Whatever contributes to the general happiness must be encouraged and commended, whilst the contrary is to be prevented and forbidden. Education can neither be confined to intellect, nor to the feelings, but both sorts of powers must be exercised at the same time, and in harmony with each other. Reason, destitute of the assistance of feelings, remains cold, whilst feelings without reason are blind, and prepare numberless disorders. Even religion, without being combined with understanding, unavoidably degenerates into superstition. Civil

governments, who know that they are instituted for the common welfare in this life, will proclaim the same rules of moral conduct for every member of the community, and tolerate every religious opinion, provided it does not disturb peace nor injure the rights of others. They will confine their exertions to the actual state of society, and not interfere in any way with the life to come; they will remit all conceptions of that kind to every one's own conscience. There will be no creed obligatory, and none will enjoy particular advantages; in other words, there will be no religion of state. I also think, that such governments will consider it as right, to pay teachers only for things which are useful to every one, but refuse to charge the community with expenses for knowledge which is advantageous to single individuals alone. Spontaneous donations, or voluntary contributions, however, may be allowed to propagate knowledge of every kind, whilst the only duty of the government remains to protect every member of the community in his exertions, as long as they are harmless to others, and conformable to general justice.

Nothing but the right of the strongest, and selfishness, can keep up the things as they commonly are, in contradiction with the principle

that every one should earn but the profit of his labours, that sinecures should be abolished, and idleness despised.

A religious reform in general seems necessary and desirable. Very few among those who allow themselves to reason, believe that the priesthood has the power of sending into or excluding from heaven. Christianity and common sense teach that every one should do his duty, and that he can do no more. Religious teachers, therefore, should be considered in the same way as teachers in languages, arts and sciences. Every one who has talent and time might study religious ideas, write and converse with others on them, in short, do as he pleases, provided he conducts himself in conformity with the principles of general morality. Every one might read the Scriptures of Revelation, and form his own opinion; and every civil government should follow the example of the United States of America, and abolish priesthood as a political body, or as a necessary division of the government. JESUS CHRIST expressly stated, that his kingdom was not of this world. (John xviii. 36.)

I am aware that the sacerdotaly will object to such a reform, and do what they can to make man believe that there is no morality without religion,

and no religion without their office, and that they deserve to be largely rewarded. I, however, cannot help thinking, that man has been, and still is, misled by priests, because he is naturally religious, and that priests ascribe to their influence what belongs to the power of the CREATOR. The time of what was called theocracy is over. I can, however, conceive, that where civil governments decide in every respect what people are permitted to do, religious as well as political opinions are dictated; but it seems natural to admit, that where liberal principles prevail, religious and civil liberty should go hand in hand.

My writings may prove, that the principles of *true* Christianity alone satisfy my mind, but not Christianity disfigured by popery, or by any sacerdotaly who substitute their inclinations for the will of God, and declare themselves infallible; nor Christianity that degrades the CREATOR, and disturbs peace and general happiness. On the other hand, the aim of civil governments being the common welfare of society, it seems to me that intelligent rulers should enact regulations to that purpose alone, and protect and even encourage religious ideas, as far as they are conducive to, and in harmony with, that end; but they should not employ religion as a means of gratifying

selfish views, nor allow the priesthood to do so; and certainly they should not allow any religious sect to enjoy privileges, these being positively interdicted by Christianity.

In giving freely my opinion, I follow the principle of Protestantism, which grants the use of reason, and I agree with them who think that no one has the right to impose his religious opinions upon others; that true religion consists in the fulfilment of all our moral duties; that the belief of this truth having been revealed, is a powerful motive to practise morality, and that this was the will of the great and all-wise Intelligence, who arranged the universe and the laws of reason.

On the other hand, I pity Mankind for not being able to bear the moral code of Christianity, and for not being ripe to enjoy religious and civil liberty. It is lamentable to see, that in some countries there are only masters and servants; that superstition, ignorance, and poverty are employed to keep the people in subordination, and to gratify the selfish views of their civil and religious leaders; and that even among civilized nations, where the best known principles of government are in vigour, the great bulk cannot be left to themselves, but must be conducted. I, there-

fore copy from Cowper's letter to the Rev. Walter Bagot: "Do I hate a parson? Heaven forbid! I love you all when you are good for any thing; and as to the rest, I would mend them if I could; and that is the worst of my intentions towards them." And, from the Hints of a Barrister to the public, "Whoever sets the best example of industry, uprightness, charity, justice, benevolence, mildness, integrity, and all those practical virtues which are the basis, immoveable and eternal, of Christianity; such a man is the best teacher of religion which the community can possibly receive." On the other hand, I reject, as destructive, every doctrine which sows a spirit of sectarian bigotry; generates superstition; introduces discord into the circles of domestic life, depreciates the bonds of charity and peace, or even reprobates all practical virtues and righteousness as filthy rags, and which places peculiar doctrines above the authority of the Gospel, whose great tendency is, and ever will be, to excite the sinner to repentance and reformation;—to cultivate benevolence and justice, and to link together mankind in the bonds of peace and charity.

A favourable change is wanted, but it may be asked, who shall produce it? the governments, or the nations, severally or together? Hitherto na-

tions are too much accustomed to be guided ; and governors too fond of commanding and imposing their good pleasure as law. Both parties seem to be wrong. Governments, it is true, may succeed better and sooner, since they can follow a regular plan, and have greater means of execution. But as rulers are too much disposed to do what flatters their selfishness, nations ought to think of their own welfare, and know that *vox populi* is *vox Dei*. Instead of expecting every improvement from their governors, they ought to work at their deliverance from tutorage. There will be masters as long as there are servants, and children depend on their parents as long as they cannot gain their own livelihood. It is conceivable that governments like to rule their subjects, but these are blameable for not using all reasonable means to gain and deserve their independency. They should be aware that a liberal government lets the people act for themselves, provided the common welfare does not suffer, and that, on the other hand, governments are despotic in proportion as they interfere with personal liberty, and prevent the public good. In fact, in many situations, when the things do not go on as they are wished for, nations may accuse themselves rather than their governors. By perseverance they will always ob-

tain what they deserve. Remarks of this kind are also applicable to the improvement of religious creeds. It is an historical fact, that the priesthood always wishes to keep religious ideas stationary, and that every religious reform began with individuals, or with the civil power. This will be the case as long as religious governors do not keep pace in knowledge and moral improvement with the community at large. Any church whose tenets were composed in dark ages, and adapted to the capacities of ignorant people, will be divided against itself, whenever the public become enlightened, and it must end in its overthrow, if the leaders remain in ignorance, and confound the aim of religion with the means that lead to it. The former certainly remains the same at all times, and amongst all classes, but the latter must vary in different periods of civilization. It is as lamentable as repugnant, to hear ignorant teachers speak of the heavenly Father as endowed with qualities for which every reasonable person would disdain his neighbour. The evil is great, and deserves the serious attention of the civil and religious governors.

What, then, is to be done to establish civil and religious liberty? Is it sufficient to proclaim a

reform? By no means. The French tried one constitution after another, and it is scarcely decided which suits them best.

It is certain that the natural dispositions and their activity determine the progress of civilization in nations as well as in individuals. Ignorant people are fond of darkness, while enlightened nations cannot bear measures of obscuratation. The French revolution abolished all external decorations and signs of distinction, but it was easy for BUONAPARTE to introduce them again, since the love of approbation is an essential feature in the French character. Any reform succeeds easily, if it be in harmony with the most active powers; but it will never take root, if it be contrary to the predominant powers, or if the necessary powers do not act. The doctrine of the innate dispositions cannot be taken too much to heart by those who wish to exercise an influence on the community. They may direct the given powers to different applications, but they can neither create nor annihilate. Many historical facts will be explained, and many erroneous opinions of governments will be rectified, when the innate dispositions will be understood. Then, also, not only the different progress in the various branches of literature, arts, and sciences, but also their

modifications, in different nations, will be easily conceived.

Amongst many instances which might be quoted, I shall mention the following. The Reformation, undertaken by LUTHER, and continued by CALVIN and others, gained more ground in Germany than in France, and it is more advanced in Scotland than in England, and it turned out very differently in different countries. There is a great deal of marvellousness and of the reflective powers in the Germans and in the English, but many of the former will begin with examining how far it is reasonable to believe, and give up rather belief than reason; whilst the latter take belief as indispensable, and reason merely on interpretations. Self-esteem and love of notoriety are great in the English and French; but Self-esteem is proportionately greater in the former, and love of approbation, combined with form, in the latter. The English, in their display of show, betray their predominant feeling, and wish to possess or do what others cannot; for instance, to appear very rich in keeping horses, carriages, and many servants, dressed in shoes and white silk stockings; whilst the French wish to be approved of, and to attract the attention of others by a fine taste in their show-things. Thus, it is,

certain, that lessons will make impression, and institutions succeed, in proportion as they are adapted to the character of nations to whom they are given. Defective heads can neither excel in arts and sciences, nor in the refined principles of morality or Christianity.

The influence of institutions on nations does not only depend on their being adapted to the innate dispositions, but also on their duration. Their effect is insignificant, if they be transitory and cannot form habit. Any new institution, like any new doctrine, in order to be of permanent usefulness, must become, so to say, incarnate, or be infused in the minds of the people; but then their influence is certain, since the innate powers being exercised during generations, increase, and act with facility. I copy a suitable passage from the introduction to the History of France, by CHATEAUBRIAND, read by himself to the Academie Française, in the sitting of the 9th of Feb. 1826.

“It has been said, that from the time of VESPASIAN to MARCUS AURELIUS, was the period during which mankind enjoyed the greatest felicity. This is true, if the dignity and the independence of nations are to go for nothing.

“ Every imaginable kind of merit appeared at the head of the empire. Those who possessed those qualities were free to undertake any thing they pleased ; they were shackled by no restraints ; they inherited NERO’s absolute power ; they could employ for good the arbitrary authority which had hitherto been used only as an instrument of evil. What, however, did this despotism of virtue produce ? Did it reform manners ? Did it re-establish liberty ? Did it preserve the empire from its approaching fall ? No ; the human race was neither altered, nor improved. Firmness reigned with VESPASIAN, mildness with TITUS, generosity with NERVA, grandeur with TRAJAN, the arts with ADRIAN, the piety of polytheism with ANTONINE, and lastly, with MARCUS AURELIUS, philosophy ascended the throne ;—yet the fulfilment of this dream of sages, was productive of no solid results to the world. No ameliorations are durable, none indeed are possible, when any act of government proceeds from the will of individuals, and not from laws and institutions ; and the pagan religion, no longer supported or corrected by austerity of manners, transformed men into old children, destitute alike of reason and of innocence.

“ There were, at this period, some Christians

in the empire, they were obscure and persecuted, yet, with their despised religion, they accomplished what philosophy upon the throne could not achieve. They instituted laws, corrected manners, and founded a society which exists to this day."

In the examination of this subject, it is found that religious and civil regulations are degraded and improved in the same degree, and by the same reasons. Stupid and ignorant people are superstitious, and believe in the good pleasure of their absolute rulers. Whoever is not able, or does not dare to think, or does not feel contradictions and absurdities, is unfit for a refined religion and civil liberty. Understanding, indeed, is the first condition of civil and religious, as well as of personal and moral liberty, and ignorance a fertile cause of superstition and slavery. Understanding improves plants and animals, and it is necessary to the improvement of nations and of the nature of man. The Germans, expressing civilization by the word *aufklaerung* (enlightening,) indicate that they consider intellect as the basis of improvement.

The great point in this discussion is to determine, first, the origin and cause of liberty, and

then the means of establishing and maintaining it. None of the faculties, common to man and animals, conceives the idea of civil liberty any more than that of religion. These conceptions result only from the human powers, and are retarded in their progress in proportion as they are influenced by the animal powers. The animal feelings are selfish, wish for personal advantage, like to take the first place in society, and dispose to religious intolerance and civil despotism. Hence, a nation is unfit for liberty in proportion as the animal powers are predominant over those proper to man. Courage, bravery, and stubbornness to death, are by no means sufficient to establish this happy state of society. Even the higher animal feelings, as attachment, love of approbation, cautiousness, acquisitiveness, and the perceptive faculties, are incapable of securing it. The animal nature, it is true, is powerful to oppose despotism, and so far conducive to liberty. Whilst timid, poor, and ignorant people remain slaves, the courageous, intelligent, and industrious seek for independency. In consequence, instruction and industry are the great means of establishing liberty, whilst ignorance and poverty are its greatest enemies. Industry procures riches, and these enable the possessor to cultivate his understanding. It is, therefore, not astonishing that all those who treat

of political welfare speak of industry as necessary and favourable to liberty. But those who think that industry and riches are sufficient to secure liberty, are mistaken; they evidently confound the means of establishing this great blessing with its primitive source, and with the means of maintaining it. Riches *alone* being a great cause of degeneration in body and mind, are incompatible with permanent liberty. The same uncertainty of things continues, even if riches be assisted by understanding, since the motives of all actions still remain selfish and of the animal nature.

With the faculties proper to man morality begins, and by their influence the animal nature is directed, every kind of privilege abolished, the number of public officers who require emoluments diminished, every individual permitted to use his talents as he likes, provided he does not injure others; every community allowed to regulate its special concerns, personal merit alone rewarded, the general welfare thought of, in short, civil liberty acknowledged. And if such a liberty be granted in worldly affairs, it is still more necessary in things and opinions relative to the life to come and religion. The effect of feelings proper to man can become reasonable only by its union with the reflective powers.

On the other hand, though the human nature is the source of civil and religious liberty, yet the faculties proper to man are not capable either of establishing or of warranting liberty. To that effect they need the assistance of instruction and of the animal powers, particularly of industry, or acquisitiveness, self-esteem, courage, and perseverance. In order then to establish and maintain civil and religious liberty, the whole man, his vegetative, affective, and intellectual faculties must be exercised, but the animal faculties constantly subordinate to those proper to man.

In this way we have a criterion to decide whether, and how far, a nation is fit for civil and religious liberty ; whether, and how far, liberty which is granted or gained can last ; and whether, and how far, governments earnestly prepare the nations for that happy state. In the same way, those who wish to forward liberty, may conceive what is to be done to secure general and permanent felicity, and why hitherto all partial means could not succeed.

A delicate question too, viz. whether any nation of those we know of, can bear the Christian religion in its greatest purity, and a republican government, may be answered in the negative, on

account of the animal nature being still disproportionate to that proper to man.

In supposing then that any ruler may have the best intention to fulfil his duty, I conclude this chapter with repeating the points indispensable to his success. Let him become acquainted with human nature in general, with the innateness of the affective and intellectual faculties, with their dependence on the cerebral organization, and with their modifications in the nation he governs. Besides, let him understand that every innate power tends to action, but that the motives of the same action may be very different; and that regulations founded only on truth and morality can last. The most important point for him is to know to employ every one according to his natural gifts and talents, be it as servant, soldier, artisan, merchant, artist, teacher of any kind, legislator, superintendent or president. He also must be aware, that various talents are given to all classes of society, to poor and rich, to country people as well as citizens; and that natural nobility and personal merit alone deserve distinction.

Governments in general employ individuals who speak and act in their favour; hence the proverb, *qualis rex, talis grex*; yet it may be interesting

for well-intentioned governments to understand, what incalculable mischief results from training individuals to professions for which they are unfit. The bad effect of a preacher, for instance, who is the slave of amativeness, acquisitiveness and self-esteem, is evident. Persons endowed with great self-esteem, firmness, acquisitiveness and destructiveness, without conscientiousness, veneration and benevolence, will never defend public liberty and general felicity; hence they are unfit to represent the nation. The clergy in France showed more talents before the revolution than after the fall of BUONAPARTE. This fact is easily accounted for, by the regulation that the priesthood alone was exempt from the conscription during the reign of BUONAPARTE. Hence, only heads of inferior capacities, or individuals indifferent to distinctions, chose that profession. The same will happen with every sort of arts and sciences, if the individuals who cultivate them are destitute of the necessary qualities. Phrenology, then, in making the natural endowments known, and in directing the choice of individuals in any situation, may be of immense advantage to wise governments, as well as to parents, teachers, and directors of any kind.

CHAPTER VII.

A FEW IDEAS ON PUBLIC AND PRIVATE
EDUCATION.

VARIOUS opinions are entertained upon the question, whether public or private education be preferable. The term education is here taken in a limited sense, and the answer would be easy, if education were what it ought to be. In the actual state of things, the greater number of parents cannot adopt the private mode of education for want of pecuniary means. The question, then, concerns chiefly the richer classes of society.

There are advantages and disadvantages on both sides. Generally speaking, in private education, moral conduct and religious principles may be more carefully taught, and the natural dispositions better exercised. But here we must suppose the governors to be of superior ability. Such persons, however, are not so easily found. On the other hand, private teachers and servants kindle very often inferior propensities, which would remain inactive were the children sent to

public schools. Again, as the education of boys and girls must be conducted in a different manner, particularly in large towns, several boarding-schools become necessary. And if in these the moral conduct be particularly attended to, they will combine the advantages of a public and private education. In them, physical education can be better attended to than at home; common play grounds and bodily exercise can be more easily procured. Such abodes are commonly in healthy situations, and better teachers may also be provided. It is of advantage to children to afford them opportunities of comparing their talents with those of others. When alone, they easily think themselves above all other children, but when together, they often feel their inferiority. The less intercourse we have with others, the sooner we are satisfied with ourselves. This happens with children as well as with adults. Those who have travelled with reflection and without prejudice, lose in many respects their national pride. They find that every where there are good and bad, ignorant and well-informed persons. Whoever remains confined to his own small circle, thinks all other society inferior, partly through a natural attachment to his accustomed manners, and partly through his not knowing what others are, or what advantages they possess.

Knowledge of the world, of different characters, of manners and social intercourse, is an important point in education. It is easily acquired in public institutions. Children soon learn to distinguish between the different manners of feeling and thinking of their companions.

Greater uniformity in manners, more mutual attachment and general benevolence, more order and greater readiness to obey and to depend on their superiors, may result from public education. There the feelings, in general, may be more easily exercised and directed, because society is indispensable to that purpose, and private education can never afford the same opportunity. Finally, the great effect of emulation is entirely lost in private instruction.

Thus, even in the actual state of things, public institutions are preferable, and they will be far superior, if once regulated according to sound principles and adapted to human nature.

Conclusion.

The great object of education is, not to create, but to prepare, to develope, or to impede, and to

direct the natural dispositions, affective and intellectual faculties. The nature of the fundamental powers, and the conditions on which their manifestations depend, must be known, to enable us to cultivate and direct them. The difference between the feelings and intellectual faculties, is particularly to be attended to. Then, if the means of excitement and those of direction be employed, as I have detailed them, arts and sciences will improve, moral evil will diminish, and mankind will become more happy. I do not flatter myself, however, that in the present state of mankind, the most perfect education can abolish all disorders. Hence, institutions of another kind are necessary, which I shall speak of in the following chapters.

APPENDIX.

ON THE CORRECTION OR REFORM OF MALEFACTORS.

As individuals differ exceedingly from each other in the innate strength of their faculties, there can be no doubt that adults, as well as children, if entirely left to themselves, and to the motives which spring up in their own minds, would not all be influenced either by the same number, or by the same kind of motives, nor would each motive act with equal force in all. Besides, the faculties which produce the lower propensities, do not of themselves produce good actions, and as they are stronger than the faculties proper to man, legislation is necessary to direct mankind. In regard to many particular acts, the government must command what is to be done, and forbid what is not to be done ; seeing few individuals possess so favourable an endowment of dispositions as to be

naturally prone to virtue, or to have the law written in their hearts. Now, the general aim of all legislation ought to be the happiness of mankind, combined, as far as possible, with that of each individual; or, in the language of Phrenology, it ought to be to establish the natural morality of man, confirmed by true Christianity. The lower animals have no conceptions of morality, because they do not possess the faculties which produce the moral sentiments and reason. Hence, those faculties which are proper to man alone, conceive the necessity of legislation, and without them there would be none in mankind any more than in the animals.

Definition of Legislation.

I take this expression in its most extensive signification, and conceive it to comprehend the regulation of the manner in which all our faculties ought to be employed. Positive legislation has been, and still is, very different in different countries. The same actions have been and still are considered now as crimes, and then as virtues. The first great object is to distinguish natural from positive laws. It appears to me that both ought to be the same, and that the

natural laws, in as far as they are known and admitted, ought to be declared positive, and to guide the actions of man. No one, therefore, should endeavour to make laws, but only to discover those made by the CREATOR, to submit to them, when discovered, as to his will, and to dispose others to follow this example.

Positive laws are divided into Divine and Civil. The former are given by GOD, the latter by human legislators.

The question which naturally occurs is, whether there ought to be differences between the natural, Divine, and civil codes. Hitherto they have not agreed, and the one makes war against the other ; but I am of the decided opinion, that mankind cannot become happy till they all accord. To say that the revealed law is not the same as the natural, is to suppose that GOD is not the CREATOR of mankind, or that he has been in contradiction with himself at different times. Such notions seem to me absurd, and I cannot admit any interpretation of the revealed law, which is evidently in contradiction with the real nature of man. Moreover, since man cannot create, he ought not to set himself up as an inventor of laws ; nor attempt to control the course of Provi-

dence, or counteract the nature of things. As already said, he should try to discover, and having discovered, to submit to the arrangements of the CREATOR with respect to his vegetative, affective, moral, and intellectual nature.

Civil legislation is necessarily divided into different branches, but they ought all to have constantly only one and the same aim, and to be the result of one and the same spirit. Hitherto selfishness has been the principal object of all civil legislation, and of every branch of it. Soldiers wish for war, and an opportunity of spoliation; lawyers also have too constantly in view their own special advantages; and the members of the ordinary professions do not think it necessary to conceal, that the end and aim of all their exertions is selfishness. The same antisocial principle is visible in all worldly affairs; and even the clergy, whose employment is to prepare man for eternity, too frequently show that selfish motives are in fact the mainsprings of their conduct. This overwhelming flood of selfishness must abate, or the general happiness of mankind remain an impossibility. There is only one permanent Legislator, viz. the CREATOR, and whatever erects itself against his institutions, or deviates from them, is usurpation and folly.

It is certainly a difficult task to discover clearly the law established by Nature, and to bring all branches of legislation into harmony. Happily, however, Nature has few laws ; but it is of great importance to know that she never admits of an exception, and punishes severely every neglect. This subject being of the highest importance, any attempt to elucidate it cannot be considered as an idle occupation, and is the true object of a philosophical catechism.

In this summary we may consider legislation in three points of view, viz. the aim ; the means necessary to attain it ; and the persons subject to the law.

Aim of Legislation.

Legislation begins with the sentiment of duty. In my opinion, the duty of man, according to the will of Nature, consists in general Benevolence and Veneration. Hence the natural law requires more than the civil. Justice,^f according to the latter, is merely passive, viz. not to take from others that which belongs to them ; while, according to the former, we are obliged to do to others what we wish they should do to us. Thus Christianity coincides with the natural law. Love thy

neighbour as thyself, is the touchstone of all legislation as to its aim.

Means to attain the Aim of Legislation.

The second part of legislation concerns the means necessary to attain the proposed aim ; but this point is not yet accomplished. Either, therefore, those who have it in their power do not earnestly wish for it, or they have not intellect enough to choose the necessary means, or the general aim of legislation is not kept constantly in view. This field is extremely extensive, but without the reach of my study. I shall confine myself to a few remarks, with respect to criminal and penal legislation, which certainly has improved in modern times ; first, with respect to the means of preventing crime ; and, secondly, with respect to those of correcting criminals.

There were ages when criminal legislators thought it their only duty to punish or to revenge themselves on those who were disobedient ; the animal powers dictated the penal laws, and the feelings proper to man had no share in them. Now-a-days, it is admitted that the penal code ought to have for its objects the prevention of

offences against the welfare of society, the correction of those who have failed in their duty, and securing the community against incorrigible members. This aim is laudable; but as it is not attained, we are led to conclude that the means employed to effectuate that purpose are not the best that might be chosen.

Various kinds of punishments have been, and are inflicted, in order to deter men from committing criminal actions. Malefactors are deprived of their personal liberty, and are confined to prison, for a shorter or longer period; some even for life. They are treated with more or less severity; some remain idle; others are condemned to hard work. Some are exiled or transported; others put to death.

Experience, however, shows, that punishments alone do not produce the desired effect. Even at an execution for stealing, pickpockets are sometimes busy committing their depredations. I do not say that punishments are useless; I only say, that they by themselves are not sufficient to prevent faults and crimes. Hence governments must have recourse still to other means. To choose these means correctly, it is necessary to discover the causes of criminal actions, for crimes

will cease to be committed as soon as their causes are removed.

The most important way of preventing crime, is that of improving mankind by every possible means, and especially by those spoken of in the preceding pages on education in general, and on that of nations in particular. Let the inferior races, whose actions are stigmatized by crimes or disorderly living, be prevented, as much as possible, from propagation; for it is a fact well known to those who have attended to the subject, that the organs of the animal passions, like those of the other faculties of the mind, are hereditary. Moreover, let ignorance, idleness, intemperance, and poverty, which are the principal causes of crimes, be prevented, and there will be little occasion for prisons.

In the General View to this work, I have considered the great influence of ignorance on the moral conduct of man. Instruction, indeed, will greatly improve the human character, and the facility of acquiring it in our days is a great blessing to mankind. It is therefore the duty and interest of wise and paternal governments to diffuse instruction as widely as possible, according to the capacities of the people, and according to

local and particular situations; and whoever wishes to promote the moral conduct of mankind, and insure their happiness, will favour public institutions for useful information.

It is both more effectual towards promoting the welfare of society and more agreeable, to correct morals, than to punish crimes. To that end it ought to be a serious aim with governments, to adopt means to exclude idleness and intemperance from society. Children should be accustomed to sobriety, and intemperate persons despised. Every person found intoxicated in the streets should be taken up and confined for twenty-four hours, and fed on bread and water.

Persons when drunk are deprived of the use of their reason, and often inclined to abuse their animal propensities; and hence the welfare of society requires them to be placed in a situation where they can do no harm, and which may contribute to their correction. The criminal records of every country bear evidence of flagitious crimes committed, and much misery inflicted, of which drunkenness was the proximate cause. Governments are therefore wrong in licensing numberless alehouses and gin-shops, and in affording great facility of pawning.

In the Chapter on national Education, I have already said, that in a well regulated state, no poverty ought to be seen, and no mendicity tolerated ; that each citizen ought to exercise a profession, and each beggar to be shut up, and to be forced to work in public employments ; that charity is misapplied, and idleness rewarded, if industrious people be obliged to support the poor. This subject, being of the utmost importance, deserves a particular examination, and the repetition of some ideas does not seem to be out of place. The law obliging the rich to nourish the poor, is an indirect infringement of personal liberty, and in opposition to the basis of a free government, which admits private property, and encourages every one to use his talents, in as far as is consistent with the general happiness of the nation. The poor laws encroach on this right, and do harm to society. They in fact hold out to the profligate, the idle, and the imbecile, an invitation to act without regard to the consequences of their actions, and promise them, that if they are overtaken by the calamities which nature has attached to heedless conduct, the virtuous and considerate shall be made to bear the burden for them.

If the poor, on account of their right to personal liberty, cannot be prevented from marrying,

the rich, for the same reason, cannot be forced to nourish them. It is an infringement of the personal liberty of an industrious citizen, to be compelled to support a lazy drone. If the poor must be permitted to marry, after the consequences are pointed out to them, then, at least, let every one be equally free; let him who gets children provide for their subsistence; and let him who labours reap the whole fruits of his own industry.

But, it may still be said, that whoever lives has a right to the prolongation of his days, and that, hence, the necessitous must not be allowed to perish. Strictly speaking, there is no doubt that those who exist have a right to partake in whatever nature produces. But civil laws are destined to keep order, and to regulate property. Now, I am willing to admit, that humanity calls upon us to preserve those who actually exist; but it appears to me to be impossible permanently to ameliorate the condition of the poor, except by preventing them, by some means or other, from excessive propagation. In the first place, It is a general law in nature, and it holds good in the case of mankind, as well as in every other species of animals, that every germ produced is not permitted to prosper and to multiply. As things are now managed, however, the best and most con-

siderate of the race, are those who are most restrained from multiplying; because they see the evils, and endeavour to avoid them, while the worthless and unreflecting indulge their propensities without fear, and fill the world with misery. This is exactly the reverse of what it ought to be. Moreover, for the sake of general order, sailors and soldiers are prohibited from living in matrimony, and why should not the same liberty be taken with the poor? If they can show that they have the means of supporting a family, they are no longer poor, and the interdict would not apply to them. Many things are forced upon, as well as interdicted to individuals, for the sake of general happiness; and this being the principal aim of society, I cannot conceive a reason why the abject poor may not be hindered from marrying, for the general good, just as they are excluded, for the same reason, from directing the government.

The law should harmonize with the manners and morals of the day, the punishment proportioned to the crime, and no hope left to the criminal to be pardoned.

Finally, the surest and most universal means of preventing crimes, would be, if selfishness could be made subservient to general benevo-

lence, and if morality could become the leading aim among all nations ;—then the kingdom of Heaven would in fact arrive. The influence of this principle cannot yet be felt by mankind at large, and many may therefore say, Why, then, do you speak of it? I answer, Because it appears to me that the arrangements of nature admit of such a state, and that men require only to understand and practise her laws, to bring it about; and as the tendency of the mind is to approximate towards truth, and to appreciate it when discovered, I am not without hope, that the time may come, when the higher sentiments shall prevail over the lower propensities, and benevolence over selfishness. Truth, whether admitted or rejected, is and remains always truth. At all events no encouragement should be given to the abuse of the lower feelings, nor any facility offered to commit crimes. Bigamy, for instance, and seduction are facilitated by the permission of marrying without a certificate of any kind.

I am convinced, that in proportion as the preceding means are neglected or attended to, offences and crimes will be committed or prevented; and that by applying them in practice, mankind will improve their condition more than by punishing malefactors, and praying the Hea-

venly FATHER for his assistance, while they neglect the natural means of preventing crimes, and producing good. The blessing of God will follow as soon as we submit to his laws; but prayers for it, while we condemn them, are impious and absurd. Prisons are not become useless by building churches. However, I do not mean to say, that Christianity is ineffectual in preventing crimes; I only maintain that no means should be neglected.

Means of correcting Malefactors.

Let us now examine how far the second point of criminal legislation, viz. the correction of malefactors, has been attained. Experience shows, that punishments alone do not correct delinquents, any more than they prevent disorders, and that the common way of treating criminals depraves rather than improves them. This truth is more and more perceived, and some practical results have already taken place, which have proved highly beneficial; and I hope that the good effect they produce will encourage their adoption in all countries. One great subject of regret, however, remains, that the nature of man is not sufficiently understood, and that in consequence, many modi-

fications of treatment, which individual malefactors require, are entirely overlooked.

Formerly, malefactors of all kinds, young and old, persons seduced by strong temptation into crimes, even those who were only accused and detained on suspicion, and inveterate villains, were shut up together. In many prisons they were idle, or if they had some occupations they were generally unprofitable, sometimes too easy, at other times too hard, often dirty and unwholesome; and because punishment, and not reform, was the principal motive of confining prisoners, they were treated with neglect. Their food was not sufficient, and sometimes noxious. Prisons were sometimes erected in damp and unwholesome situations. The prisoners were, on account of ill treatment, affected with various cutaneous and scrophulous diseases, with blindness, dysentery, consumption, typhus, &c. Such aggravations of punishment were too severe, and against the intention of the law.

This error has been felt, but in our days men are falling into an opposite extreme. In many prisons there is too much comfort, and not punishment enough. Here and there they become houses of reward. They perhaps appear still

uncomfortable to the rich administrators, but they afford more comfort than the greater number of criminals are accustomed to. The prisoners are clothed, secured against the inclemency of the weather, have a good bed to rest on, and are better nourished than at home. Some persons, indeed, commit faults in order to be taken into them. Such prisons fail to effect their purpose. To be confined in a prison, ought always to be a disagreeable situation in one way or another. A proper arrangement would be, to have in each prison a variety of apartments, affording different degrees of comfort and accommodation, and to put every atrocious criminal into the lowest first, and let him rise to the higher as his moral improvement proceeded. This would be a practical illustration of the great natural truth, That a state of vice is one of misery, and a state of morality one of comfort and enjoyment. Prisons constructed on such principles would no doubt require to be extensive; and they would, in their first erection, be expensive. But whether would a nation derive greater ultimate advantage from a sufficient number of such establishments, to correct and restrain the vicious part of her population, or from a victory in a war about a sugar island? And the sums consumed by the nations of Europe in prosecuting quarrels which have no natural foun-

dation, and in inflicting misery on each other, would have placed a penitentiary in every department of every kingdom! Such are the results of the dominion of the animal over the man in human affairs.

There are still other causes which prevent the correction of prisoners. Prisoners are taken in ignorant, idle, poor, and disorderly, and are dismissed in the same state, or perhaps more instructed in vice. Being together, they are induced to converse; and even where this is prohibited when at work, they take advantage of every moment, when the overseer is absent, to do so, or they find in the yard an opportunity of becoming acquainted with their companions. They tell each other their crimes and tricks; and every new comer, especially if his natural dispositions harmonize with that kind of instruction, profits by such lessons, and his corruption is soon complete. In a short time the novice is accustomed to live intimately with the outcasts of mankind, becomes one of themselves, and then all shame and bashfulness disappear. In this manner, according to the saying of the criminals themselves, prisons are schools where all sorts of vices are taught. The malefactors become friends,

and form projects, to be executed when they are liberated; they organize bands, and prepare to pursue with greater audacity their former criminal life.

The greater number of malefactors who are liberated, are incapable of gaining their livelihood. Their immoral habits, their idleness, and even sometimes their intemperance, have been increased during their confinement, and nothing can be more natural, than that they should yield again to their animal dispositions. Nay, some are forced to continue their depraved manner of living, to escape dying of hunger. This, for instance, is the case with those who are branded, and publicly dishonoured. Who will give employment to such individuals? Who will work with them in the same shop? If it seem necessary to brand, in order to know whether a criminal has already committed a crime, let it be done where the mark may easily be concealed.

Another manner of treating prisoners, without correcting them, and which is very illiberal towards neighbouring countries, is that of sending all malefactors over the boundaries. Such a course of proceeding should be only permitted in cases of

political errors. In other cases, it is saying to a malefactor, Do not steal in my house, but go to my neighbour's, and do what you please.

The common way of treating criminals gives rise to another injustice against society. According to the present mode of conducting jails, those who, by their criminal actions, disturb the general peace, live at the expense of the quiet and honest citizens. It is indeed shameful, that malefactors, who are commonly stout fellows, and in the best years of their lives, should not gain the necessary means of subsistence, while manufacturers get immensely rich by the employment of other people.

Thus, it is high time to rectify such abuses. The aim of all prisons for malefactors, who are to be sent back into society, ought to be only one and the same, viz. correction. But, then, in order to change the houses of Perversion, which all common prisons are, into houses of Correction, other regulations must be put into execution.

I repeat that these ideas are not new, but they must be repeated till they are practised every where. First, then, let the causes which produce offences and crimes be removed. Ignorant people

who are taken up, should receive instruction, and their attention should particularly be directed to their duty in society. They must be treated as grown up children whose education has been neglected. It will be more difficult to change their habits than those of children, but they are more capable of feeling the difference of motives, and their will may exercise a greater influence on their actions.

Idleness ought not on any account to be tolerated. Those who know a trade, may continue to exercise it; and those who do not know, may learn one. The better heads may superintend the inferior, and become their masters and teachers. Every prisoner should be compelled to work to pay his expenses. If they gain more than is necessary to supply their wants, and if they have placed their fellow creatures in misery, those, for instance, who have put fire to the house and destroyed the whole property of a family, ought to be obliged to indemnify them as far as possible; others, who gain above their personal wants, may be allowed to turn it to the profit of their family, or may put it aside to receive it at their exit. Prisons should be open to the gratuitous inspection and superintendence of intelligent and benevolent individuals of the community, or if such cannot

be found, the prisoners might work to pay inspectors. The confinement should last till the occasional causes which gave rise to the offence are removed, and till amendment is probable; and on being released, the prisoners are, for a certain time, to be observed by the inspectors or the police. If each large town were divided into districts, and several of the respectable inhabitants of each district would act as inspectors, and visit the released prisoners who come to settle in it, they might save many from relapsing into crime.

The system of confining prisoners indefinitely till corrected, certainly supposes perfect justice in the management of the jails; otherwise persons might be detained in prison from improper motives, and much longer than necessary for amendment. Such an abuse ought to be most carefully guarded against; and, perhaps, the best of all checks to its existence, might be found in the system of open and gratuitous inspection by benevolent individuals above recommended. The public could never conspire to do injustice to an individual; and while his confinement was continued under their eye, there would be very little chance of its being unjustly and unnecessarily prolonged. Or, the period of confinement might be mentioned in the sentence, leaving power to the

inspectors, or some properly constituted authorities, to shorten it on proofs of amendment.

The efficacy of prisons established according to sound principles, is no longer speculative. PENN first showed it in a practical way at Philadelphia. Several governments have followed his example, and the result has perfectly answered their expectations. Relapses of malefactors dismissed from prisons and common houses of correction are usual, while in the houses of correction, conducted according to the new plan, only one or two in a hundred are confined a second time.

The new method of treating criminals is advantageous also in other respects to society. The prisoners gain more than they consume, and being corrected, they no longer injure orderly, nor seduce innocent persons.

It is important to understand human nature, and the modified characters of the malefactors, in order to treat them properly, because every measure which the natural constitution of each individual renders available to produce amendment may require to be employed. A knowledge of this kind will confirm and render still more useful the practical views of several intelligent

benefactors of mankind. The reader may consult JOHN HOWARD on Prisons and Houses of Correction; the work on the Prisons of Philadelphia by a European (Duke of LIANCOURT); *Théorie des Peines et des Recompenses*, par JEREMIE BENTHAM; An inquiry, whether Crime and Misery are produced or prevented by our present system of Prison-discipline, by THOM. BUXTON, &c.; and he will find in Phrenology, a most satisfactory theory to explain and to direct the farther application of the practical maxims of these authors.

Treatment of Incurrible Offenders.

I come to the third point of penal legislation, viz. that which has for its aim to secure society against incurrible individuals. I shall not enter into the vain discussions on the right of society to inflict capital punishment. I take it for granted, that society is entitled to cut off one of its limbs for the sake of the happiness of the rest, if there be no better means of securing that end; but death, as the last evil, ought not to be inflicted till all other means have proved ineffectual.

Some crimes are punished with death, in order

to prevent their repetition. All judicious writers, however, speak with regret of the frequency of capital punishment, and deny that it has this particular effect. Death is not equally frightful to every one. Criminal legislators judge of others according to their own feelings; they fear death, hence they think that all men do the same. Experience, however, shows that to many persons death, when contemplated at a distance and as a contingency, is not appalling. Nay, by some, even the immediate infliction of it appears to be regarded as a small evil. The unfortunate wish for it, in order to be delivered from their pains. Those in despair destroy themselves, and many become the martyrs of ambition and religion. The laws, themselves, suppose that the loss of life is little in the eyes of many criminals, for means are taken to prevent them from putting an end to their days, which they would do rather than be confined for life. It is certain, that several criminals are not at all moved by the sentence of death, and that they go to the gallows with perfect calmness and resignation. Inveterate criminals commonly say, Dying is nothing, we must finish in that way.

It appears to me, that there is no harm in delivering society from villains, particularly from

those who are dangerous to the existence of others. A tree that brings forth no fruit, is cut down and burnt; a furious animal is killed; and a dangerous fellow may, on the same principle, be extirpated. Yet I am also of opinion, that capital punishment might be abolished, and replaced by other means which would be more effectual to protect society. There is an inconsistency in the present practice of inflicting death as a punishment for a great variety of offences; for certainly crimes differing greatly in atrocity do not merit exactly the same retribution. If it be true that crimes must be judged of according to the perversity of the malefactor, and according to the mischief which results from the offence; and if it be established as an axiom, that a crime consists in the intention and not in the action; all crimes which are at present capitally punished, cannot be considered as equal in guilt. A man who intentionally kills his benefactor, or another who kills one who has excited his jealousy and disturbed the peace of his family; an inexperienced girl who, in a moment of despair, destroys her offspring, the cause of her misery for life; the horrid monster who strangles an old father to enjoy his inheritance the sooner; the prostitute who assassinates the companions of her debauchery; and the highwayman whose whole

life is only a succession of robberies and murders, who spreads desolation and devastation in whole districts, cannot be considered as equally guilty. Either, therefore, the minor offences should be visited with a less punishment than death, or, to preserve consistency, the greater offences should be followed by death aggravated by increased horrors; a proposition at which even the sanguinary spirit of legislation would revolt. But as it is said, that death is the ultimate extent of judicial authority over malefactors, and that every punishment beyond it is cruelty, it ought not to be inflicted on individuals who might be prevented from doing evil by other means, such as confinement and education; nor on those equally, who are guilty in very different degrees, particularly since it does not prevent others from committing similar offences.

If the proper means of education and correction were employed according to the law of nature, the injustice in criminal legislation, now mentioned, might be avoided; and, indeed, there would soon be no occasion for capital punishment at all. There ought to be a particular establishment for those who are confined for life, regulated by sound principles. It may be found necessary to treat some with severity, yet by far

the greater number will be kept in order by just treatment.

The idea of punishment is closely connected with that of the different degrees of guilt. If the reformation of malefactors were the principal object of the penal code, the possibility and means of correction would be the first object to be considered, and the extent of the guilt only the second. Punishment would then be viewed as one of the means of correction, but all the others would likewise be examined and employed. The greater the villain, the more care would be taken to correct him. At the same time, it is natural to consider the different degrees of guilt. On this point, many ideas may be communicated which are not adequately understood by legislators, because they are not sufficiently acquainted with human nature.

It is scarcely possible for human intelligence to decide with perfect justice, in regard to the precise extent of guilt and innocence in every particular case. All the motives and causes which have determined a malefactor to commit a crime, cannot be known by man, and without such a knowledge, it is impossible to form a perfectly just estimate of the exact degree of guilt.

Such a judgment must be remitted to Him alone, who is all-wise. Although, however, human wisdom has limits, it must extend itself as far as possible. In penal legislation, extenuating and aggravating motives are admitted; and indeed some individuals, the fatuous and insane, are not held as answerable at all for their actions. In other cases, actions may be clearly illegal, which nevertheless admit of extenuating motives. I shall speak of several grounds of extenuation which appear to me to be founded in nature, but which nevertheless are not considered as such in different countries.

ON ILLEGAL ACTIONS WITHOUT GUILT.

The first condition upon which a man is answerable for his actions, is that he is free. Here I take it for granted, that my ideas on moral liberty, such as they are developed in *The Philosophical Principles of Phrenology*, are known to the reader. Whenever moral liberty is wanting, there is no guilt. This is the case at those periods of life when the human faculties have not acquired strength enough to exercise will, viz. in infancy, or when the influence of will is suppressed by the state of disease. In all countries, a certain

age is fixed when punishment may be inflicted. It is also admitted, that the diseased state of the manifestations of the mind excludes culpability; but the extent and appearances of this state are not sufficiently understood.

I.—*Illegal actions of Idiots.*

Idiocy is Complete or Partial: Instances of the former kind are rare; of the latter numerous. Complete idiotism is easily distinguished, and does not require a detailed elucidation; but the common manner of judging of incomplete idiotism is frequently very erroneous. Legislators and judges are not yet convinced that there are *various* faculties of the mind, and that the manifestations of each power depend on a particular part of the brain; that one or several organs may be very active, while others are in a state of idiotism. These facts, however, which, although not generally admitted, are true, explain why, in some individuals, the perceptive faculties and the inferior propensities may be very active, while the powers of the moral will are silent. Such individuals are like animals, and cannot be moved by moral motives. They act only according to the feelings which they possess, without

being able to choose between motives. PINEL speaks of an idiot who had the most determinate inclination to imitate the voice and gesture of all persons around her. It is observed, says FODERE, "That by an inexplicable particularity several cretins, endowed with so little intelligence, are born with a particular talent for drawing, musical composition, rhyming, &c. I have seen," continues he, "several of them, who learned, by themselves, to play pretty well on the organ or harpsichord; others, without having had any master, knew how to mend watches and to make various mechanical instruments. This phenomenon probably results from the more perfect organization of the organ on which such or such an art depends, and not at all from the understanding. For, these individuals do not know how to read books which treat of the principles of the respective arts; they are even disturbed at being desired to learn the principles." (*Traité du Goutte et du Cretinisme*. Paris, 1800, p. 133.)

I have mentioned many cases in my work on *Insanity* (p. 120—133.); and in that on *Phrenology*, where I speak of destructiveness and acquisitiveness. Idiots, although mischievous, are not objects of punishment, yet it is rash to say, that all means of correction are useless. They ought,

at all events, to be prevented from doing harm to others; and as they cannot be left to themselves, there ought to be houses of security for such unfortunate individuals.

There are cases, in which it is extremely difficult to decide whether there is or is not will. "Persons," says Dr. RUSH, (*Diseases of the Mind*; p. 268.) "who are inordinately devoted to the use of ardent spirits, are irreclaimable by all the considerations which domestic obligations, friendship, reputation, property, and sometimes even by those which religion and the love of life can suggest to them. An habitual drunkard, when strongly urged by one of his friends to leave off drinking, said, Were a keg of rum in one corner of a room, and were a cannon constantly discharging balls between me and it, I would not refrain from passing before that cannon, in order to get at the rum.

"There are many instances," continues Dr. RUSH, "of persons of sound understanding, and some of uncommon talents, who are affected with the lying disease. Persons thus diseased, can neither speak the truth upon any subject, nor tell the same story twice in the same way, nor describe any thing as it has appeared to other

people. Their falsehoods are seldom calculated to injure any body but themselves, being, for the most part, of an hyperbolical or boasting nature, and not injurious to the characters and property of others. That it is a corporeal disease, I infer from its sometimes appearing in mad people, who are remarkable for veracity in the healthy state of their minds, several instances of which I have known in the Pennsylvanian hospital. Persons affected with this disease, are often amiable in their tempers and manners, and sometimes benevolent and charitable in their dispositions. Lying, as a vice, is said to be incurable. The same thing may be said of it as a disease when it appears in adult life."

The time will come when several malefactors will be declared insane, who are now punished. The only difference, however, will perhaps be in the aim of their confinement, viz. they will be shut up, in order to be prevented from doing mischief, instead of being shut up with the view of making atonement to justice. The laws of Nature are severe, but they are just. General order must never be allowed to suffer for the sake of one or several individuals. Even these persons, however, must, as much as possible, be allowed to enjoy their natural rights. In a prison

at Berlin (Stadtvogtey), we found a boy of an unfortunate cerebral organization; the forehead was low and narrow, depressed immediately above the eyebrows, much hollowed sideways above the eyes, but large and prominent at the temples. His countenance indicated slyness and malice. Dr. GALL said, that such individuals should not be left at liberty, but ought to be kept in an establishment for security. The registers, when referred to, proved that the boy, from infancy, had shown the most obstinate propensity to steal. Such individuals, indeed, become more incurable upon every relapse. In such cases, all means of correction should be tried first, and if these are found fruitless, it should then be declared lawful to detain them for life, but to treat them with humanity. They ought to be considered as persons affected with a disease, pregnant with danger to society. In general, nothing but amendment of conduct should entitle malefactors to return to the society which they have disturbed.

II.—*Illegal actions of Madmen.*

Madness is every where allowed to take away guilt, but its nature is not sufficiently understood. The most important points to be attended to are,

that it may be general or partial; that the feelings as well as the intellectual faculties may be deranged, and that general and partial insanity may be continual or intermittent. General and continual madness is easily distinguished, but partial and intermittent insanity is less known than it ought to be.

My ideas on these points are detailed in my work on Insanity, and I refer to it for a fuller developement of the subject. Individuals under the involuntary influence of these faculties through disease, are to be treated as patients and cured, not as criminals to be punished.

ON ILLEGAL ACTIONS WHICH ADMIT OF EXTENUATING MOTIVES.

It is impossible to weigh exactly the motives which may produce illegal actions. In examining whether an action be just or unjust, we commonly think only whether it is conformable to the law or against it. Yet, as long as legislation intends to punish, the degree of guilt attributable to the individual cannot be entirely overlooked; for otherwise, an idiot who assassinates would be liable to the punishment of a sane person; in

short, extenuating motives would not in any case be admitted:

Violent passions and affections, such as anger, fury, jealousy, rage, &c. are considered as a transient madness, and are justly admitted as extenuating motives. But it ought to be known, that some persons may feel internally an excessive excitement of these affections, who restrain the outward expressions of them; nay, that such persons sometimes suffer even more than those who manifest their anger externally, and who tear their hair or stamp with the feet, &c. Shame, despair, and many secret affections darken the spirit of man, as much as sudden and violent passions; and they derange equally the state of health and the judgment.

Moreover, the same exciting cause will act violently on one person, and scarcely make an impression on another, according to their natural constitutions. Certain kinds of food, principally liquors, excite differently the individual dispositions of different persons. Wine or brandy renders one courageous and quarrelsome, another eloquent, sincere, amorous, sorry, gay, &c. The highwayman, PETER PETRI, a companion of SCHINDERHANNES, seemed to be insensible in

his common state ; but when he had taken several glasses of brandy, he behaved like a tiger, and attacked friends and enemies indiscriminately. We know the history of a woman who, after drinking some glasses of brandy, felt a strong involuntary desire to become an incendiary. Illegal actions done during drunkenness, at least the first time, should find in it an extenuating motive. The guilt is greater, if the effect of spirituous liquors be known, and if they be not avoided.

The most intricate situation, with respect to extenuating motives, is when one faculty in particular is extremely active in individuals. This may happen with regard to every power. If it be the case with a superior faculty, such as benevolence or veneration, the individual may be said to be fortunate. Yet, in the same way, every other feeling, for instance, an insatiable desire of glory, may govern the whole conduct of some persons ; and again, every animal propensity may become excessively active. This state is not insanity ; the individuals are able to distinguish the influence which excites them, and have power to restrain it, and are therefore answerable for their actions ; but their situation is an unfortunate one ; for they are called upon to

maintain a dreadful struggle with their ruling propensity. In a family which we know, the desire to drink liquors is hereditary; the grandfather and the father have killed themselves by hard drinking, the grandchild, when only five years of age, manifested the same inclination. There are similar examples with respect to acquisitiveness and destructiveness. The question, then, is, Whether and how far the innate dispositions, when in this manner excessively strong, are to be considered as extenuating motives? At all events, it is certain, that not only violent and sudden affections, but also various other excitements ought to be considered as extenuating; and I have no doubt that they will be admitted by degrees, as they are understood.

Let us examine a few examples, among the infinite number which might be quoted. A first lieutenant was inspired with a passion for the wife of a private in his company. This virtuous woman steadily refused his propositions and importunities, without saying a word of it to her husband. One day, at exercise, the lieutenant treated the husband very ill, and ordered him several times to be bastinadoed. As the husband complained, he was treated as stubborn and mutinous, and forced to be silent by fifteen

other blows. His unfortunate wife told him the intention of the lieutenant. From Thursday to Sunday he meditated and projected the death of his wife and his children. He admonished his wife to confess, and to go to the communion-table. He did the same. He was always mild, a good father, and an excellent husband, but during these days he excelled in these qualities. On Sunday, after dinner, he proposed to his wife to take a walk with him. He conducted her under the willow-trees, planted along the glacis of the citadel at Breslaw, and, whilst caressing her most tenderly, he pierced her heart with a dagger. He went back in haste, that he might not be prevented from sending his two children into heaven. He hoped to find in them intercessors before God. He killed them with a little axe; placed them on the bed, their arms crossed; went then directly to the guard, with a countenance of satisfaction, and told what he had done. "Now," added he, "may the Lieutenant of *** make love to my wife. She and her children are secured against seduction and dishonour. They will be obliged to me for their happiness, and pray for me in heaven." The court-martial, at Breslaw in Silesia, did not think of extenuating motives, but even aggravated his punishment, by depriving him in prison, and at

the moment of execution, of the presence of a clergyman who might encourage and prepare him for death.

The work of CRICHTON on Insanity contains several examples of this kind. "CATHARINE HANSLERIN, forty-five years old, was an inhabitant of Donauwörth. She had been twelve years married to a man of a severe and unfeeling temper, and, excepting a fever, and some slight irregularities in regard to her menses, was a tolerably healthy woman. About the end of the year 1785, she was detected in stealing milk in the village where she lived. She solicited, in the most earnest manner, that the circumstance might be concealed from her husband, whom she dreaded. It was promised, but not observed. At first, he was told of it in an obscure way, but he afterwards discovered the whole truth.

"The detection of her fraud made a deep impression on her mind, not only on account of her good name, but also on account of the treatment she was likely to receive from her husband. In consequence of this, she became low in spirits, and melancholy. She had confessed, but it did not relieve her mind. She prayed often, with-

out knowing what she said. She had been frequently seized with violent headaches, during which she was not conscious of what she did.

“ Her husband, when he heard of her stealing, beat her severely. After this ill-treatment, she went to bed, trembling for fear, and dreading worse usage the next day. Her daughter, a little girl seven years old, came to her bedside, and prayed with her. She had formed the resolution of leaving her husband, and asked her daughter, if she would stay with her father? This the girl refused to do, as she was afraid of him. After praying devoutly, early in the morning she left her husband's house, and took her daughter along with her, and also her infant, that was only two months and a half old. As she was about to depart, she again asked her daughter if she would not rather live with her father? The girl answered she would rather die. The thoughts which this answer occasioned in the mother's mind, the misery and distress which surrounded her, the fear of what might happen to her children in case she died, and, at the same time, her own ardent wish to finish her existence, all these thoughts caused her to form the barbarous resolution of drowning them.

“The infant she took in her arms, and being arrived at the banks of the Danube, she caused her daughter to kneel down and pray to God to deserve a good death. She then tied the infant in the arms of the girl, blessed them, by making the sign of the cross on them, and threw both into the river. She afterwards returned to the village, told what she had done, and was executed.”

“A young woman, twenty-three years of age, was sent to the house of correction at Onolbach, 1755. She was received with blows and stripes. This treatment made so deep an impression on her mind, that she began to detest life, and in order to get rid of it, determined to commit murder. She thought that by so doing, she would have time allowed her for repentance, which she knew she could not have, were she to destroy herself. She premeditated her design in cold blood, and accomplished it on another woman in the following manner.

“One Sunday she complained of being ill, and requested to be excused from attending Divine service. A simple, and half fatuous girl was allowed to attend her. She convinced this girl that there was no hope of their being relieved

from their present miserable situation, but by their both consenting to die, and she proposed to the girl to kill her first. The girl was soon reconciled to the proposition, and the only condition she made was, that her companion should not hurt her. She stretched herself out, and the murderess accomplished the horrid crime by cutting the girl's throat.

“ Upon being asked, in the court of justice, what could have induced her to commit so horrid a deed, as the murder of her fellow-prisoner? she answered, Fear of the sharp blows and pain she knew she had to sustain in the house of correction. She thought within herself, If I take away my own life, my soul is lost for ever; but if I murder another, though in that case I also must forfeit my life, still I shall have time to repent, and God will pardon me. When she was asked, Whether she had no hatred against the deceased, or if she had ever received any ill-usage from her? she answered, That the deceased had never done her any injury, and if any thing vexed the deceased, she always came to her to make her complaints. Upon being asked, if she slept well after having committed so horrid an act? she answered, That she prayed to God before going to bed, and slept well, and when she awoke, she again prayed. She

seemed perfectly calm and recollected during her trial, until it was explained to her, that she had drawn down the eternal wrath of God upon herself. Then she wept bitterly. The physician ascribed the crime to despair, and *tædium vite*; but the law would not understand the hint."

There is a similar fact mentioned in the journal which is published at Leipzig, under the title *Zeitung für die elegante Welt*, (N. 92. 1st Aug. 1805). Amongst a great number of malefactors confined in the prison of Torgaw, and presented to Dr. GALL, there was a woman who had drowned her child, a boy of four years old. Dr. GALL examined her head, then took the hand of Professor LODER, who was present, and put it upon the organ of Philoprogenitiveness, that he might examine its size. When the prisoner had retired, GALL said that that organ was great in this woman, the organ of Murder (as it was then called) small, and that, in general, her head was well organized. He desired to be informed of her character and capacities, principally with respect to her crime. The magistrate said that this person was born of poor parents, whom she had lost early, and that she had received no education. When grown up, she became a servant in the village. Every one was satisfied with her con-

duct and behaviour. Unfortunately she was seduced, and had a child. The being to whom she gave life was the cause of her misery. She was dismissed from service, and no one would receive her on account of the child. For a long time she did not know how to endure her situation. She loved her infant with the most tender affection, though she had reason to detest his existence. Finally, a poor peasant and his wife had pity on her; they kept the child in their house, and took care of him for three years. The mother found a place, and her behaviour was very exemplary.

The child increased, and gave great satisfaction to the adopting father, who loved him very much. This was enough for bad tongues to say, that the peasant was his father. Satisfied with his conscious innocence, he despised the wicked imputation, but this was not the case with his wife. To keep peace at home, he was obliged to give the boy back to the mother. She begged her master and mistress in vain to keep her; in vain she represented to them, that she had served with exemplary assiduity and fidelity. She was discharged in the most severe season. All the wealthy peasants treated her with the same severity. She sold whatever she possessed to feed her child and herself. He decayed through cold

and misery. In this situation she prayed to Heaven to let both herself and him die. Her maternal affection was overpowered by an internal voice, which said aloud, that the only means of saving them was the destruction of her child. She preferred to see him die suddenly, and in a moment of despair, she carried him to the River Elbe, and precipitated him into the stream. Exhausted, she fainted away, and was found in this situation. As soon as she recovered her senses, she accused herself. During her detention before trial, namely, a whole year, she behaved very well; she manifested distinct and deep repentance of her deed, which, however, she did not consider as a crime. The clergyman, who visited her from time to time, said that she was ignorant, but that she was mild, and very docile. The superintendants gave excellent testimonies of her good conduct. These different motives determined the Court of Appeals to change the first judgment, according to which she ought to have been beheaded, and they condemned her to confinement for life, without being severely treated. Here she learned to write and to read, and her whole conduct was orderly.

From this narrative of facts, it is evident that her organization was not in contradiction with her

manner of feeling and thinking, and that she deserved the benefit of the application of extenuating motives.

There is no illegal action which has greater and juster claims to be treated with equity than child-murder. In various countries penal legislation is too severe in this respect. I am far from excusing a crime when it is voluntary, but I contend also for extenuating motives, whenever they can be admitted. Legislators and judges are commonly more or less severe, according to their own manner of feeling, rather than according to philosophical principles. Several say, is it possible to imagine a more barbarous and inhuman action, than that of a mother, deaf to the cries of nature, destroying her child, at the moment when he seeks for aliment from her breast? Others reply, that because infanticide is a crime against nature, and because the hearts of all mothers revolt at the idea of it, it is impossible that it can be committed except in a moment of derangement, and in a state of delirium.

Infanticide impresses us with the idea of barbarity and atrocity with the greater force, because it seems natural that the love of offspring should prevent such an action. It is true, nature has en-

dowed the greater number of women with this benevolent propensity. But in women, as well as in females of animals, this propensity has different degrees of energy. Certain cows do not suffer their calves to suck; some pigs, cats, rabbits, &c. kill their young, while other females of the same kind of animals cry for several days, and refuse to eat, when they are bereft of their offspring. It is a lamentable truth, that this difference of motherly love exists also in mankind. All women do not desire to become mothers; some consider their pregnancy as the greatest misfortune. Several mothers seek various pretexts, in order to remove their children out of the house. There are others, who being freed from shame, reproach, misery, and many inconveniences, by the loss of their illegitimate children, yet shed tears for a long time after, at the remembrance of them. Others, on the contrary, see their legitimate offspring buried without a pang. Thus it is beyond doubt, that natural love of offspring is very weak in some women. It is therefore wrong to believe that infanticide is a more unnatural act than any other murder.

I have examined thirty-seven child murderers, and in thirty the organ of Philoprogeny was very small. It does not follow that a mother,

in whom the organ is small, must necessarily destroy her offspring. My object is only to observe, that this sentiment is not strong in every mother, and that, if females, in whom it is weak, are exposed to various unfortunate circumstances, they are destitute of a great motive to combat the internal sensations which may impel them to this crime.

Almost all laws against infanticide are framed on the supposition, that this crime, when not committed in a fit of rage and hatred, is always premeditated. But is it true that these two are the only affections which exclude premeditation? Different actions of our sex may be cited, in answer to this question. How often does not the sentiment of honour, which is even preposterous, dispose man to hazard his life. Several have destroyed themselves, for having lost a woman they loved. Others despair from disappointed ambition, or from the loss of fortune. Our sex, however, is the strongest; we are seldom destitute of all resources, or deprived of all hope of finding a companion for life. How different is the situation of an unfortunate woman? The intellectual faculties of the female sex are commonly weaker; hence they have less will to resist their stronger sensibility, and stronger affections and passions. Their

sentiment of honour and shame is cultivated from infancy, exercised and exalted ; and we require of young, timorous, inexperienced and sensible creatures, when the most dreadful event overwhelms them, to be cool, calm, and reflecting. The complaints of pregnancy, and many terrible thoughts during it, weaken the bodily strength, increase irritability, and disturb the mind. When the critical moment arrives, they are most frequently alone, without consolation, overwhelmed with grief, weakened by the loss of blood ; how, then, can we expect that their judgment should be sound ? and if such an unhappy mother destroy the feeble existence of her offspring, perhaps in a fit of delirium, how is it possible to confound such an action with the most horrible of crimes ?

Moreover, men and women are more irritable at certain periods. In my work on Insanity, I have treated of these periods of irritability in the article on Fits. It coincides in women with the period of their menses, and their delivery happens at the same time, viz. when the mother would have had the tenth periodical return. Thus it is natural, that at this period the unfortunate woman should feel her situation more strongly, and be more inclined to take a fatal resolution.

Our sex can never be exposed to such a misfortune; and if we, the legislators, think that it is not expedient to require satisfaction from the seducer, and if we fear to be unjust against perfidy, why do we fear to be indulgent and humane, towards the frail and disappointed female? It is even conceivable, that such an unfortunate mother may continually think of the ingratitude and perfidy of the father of her child; that she may consider how he has deceived her in the most infamous manner; how he is the cause of her ignominy and misery; how he, perhaps in the arms of another person, forgets his forfeit, whilst, in some countries, the laws do not afford her any protection against him; and how his stratagems are styled merely love intrigues. May not indignation trouble her understanding, and excite derangement of her mind?

Indeed, if it were not so difficult for a mother to take such a desperate resolution, infanticide, the result of illegitimate pregnancies and of perfidy on the side of seducers, would be much more frequent. Hence it is but just to take into consideration the internal conflict which may have deranged the senses of a child murderess, and to appreciate all extenuating motives. The ideas on infanticide, which Dr. HUNTER has detailed in a

letter to the Royal Society of London, deserve the attention of every criminal legislator. I agree that it must be punished as murder, when it is committed with premeditation, with mature reflection, in the complete use of moral liberty, without an urgent provocation, and through mere depravity of morals. In this case, the legislator deserves all thanks for protecting the child who is without support and defence. But it is important to know how to distinguish the different circumstances which accompany this action, and there can be no doubt that very often infanticide admits of many extenuating motives.

Lying-in hospitals, where every woman with child is taken in and brought to bed, without being obliged to say who she is and whence she came, and foundling-hospitals, often prevent infanticide. In countries where such establishments are wanting, child-murder is more frequent than in others where they exist. These institutions, however, tend so much to weaken the motives to moral restraint furnished by the obligation to support and to cherish offspring, that it may be fairly questioned whether the evils they produce in this point of view, are not greater than those they prevent in the other.

In order to prevent child-murder, there is a law in certain countries, which obliges pregnant girls to discover their situation to some accoucheur or midwife. If they do not fulfil this formality, they are supposed to have the intention of committing infanticide. In other countries, the proprietors of houses are answerable for pregnant girls who live in them. They are thus required to know the state of their locatories.

Unfortunately legislators are often in the same situation as physicians who attend incurable diseases. They try uncertain means, rather than do nothing. The law which obliges women to intimate their state of pregnancy, is in contradiction to nature. It is not necessary to mention, that there is no need of such a law with respect to girls of the town. These have lost their bashfulness, and will go to the lying-in hospitals to be delivered. Such a regulation, therefore, must be intended for timorous, bashful, and decent women, who have been seduced. Now, the feeling of honour and bashfulness is considered as the best safeguard of female virtue, and is constantly cherished accordingly; nevertheless, when such a girl falls, she is required, under pain of punishment, to make her shame known. There are men

of mature age who, with the greatest reluctance, would confess certain diseases to their most intimate friends. How, then, can the law be so severe on females, for not confessing a circumstance which they are taught to look upon as more disgraceful than any disease? Besides, when we consider that such unfortunate girls are frequently actuated by a strong feeling of the ignominy and misfortune they bring on their family by their misconduct, we ought to recollect, that their obstinacy in concealing their state, may, in truth, be allied more nearly to virtue than to crime.

Thus, if extenuating motives are in any circumstances to be admitted, in no cases will they be more truly applicable than in those of infanticide.

In my work on Insanity, I have shown, that suicide in many cases is the effect of a corporeal disease. It then admits extenuating motives. Criminal legislators, if better acquainted with it than they commonly are, certainly will modify the laws upon the subject. These very rarely are of much efficacy in deterring those who wish to end their days, and are no punishment for

them after death ; but it is not a matter of indifference to whole families, to have the stigma of alliance with a malefactor forced upon them, when in fact they have only had the misfortune to be connected with a diseased individual. For details on this subject I refer to my work on *Insanity*.

CONCLUSION.

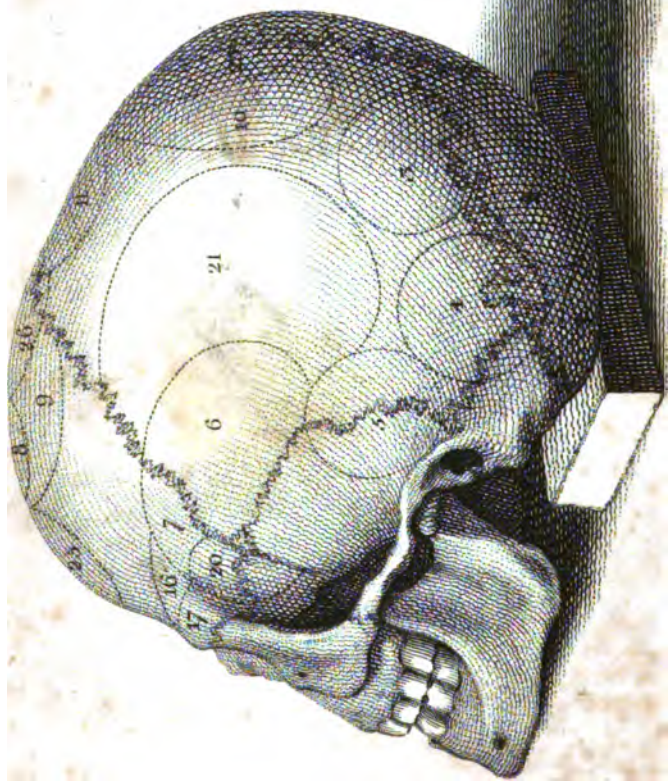
THE considerations, examined in the Appendix of this work, tend to show, that legislation in every branch ought to have only one aim, viz. the general happiness of mankind, and that of each individual, as far as it is compatible with the former ; that penal legislation, in particular, ought to be corrective ; that in prisons, the inhabitants of which are to be sent back into society, all possible means of correction should be employed ; that capital punishment might be abolished, and the crimes for which it is inflicted prevented, by proper establishments. As punish-

ment, however, is still the object of the penal code, I have treated of the different degrees of guilt which may be implied in criminal actions; and of some illegal actions that admit of extenuating motives, such as suicide and infanticide. From this Appendix, too, it may be inferred, how important and necessary, for legislators and judges, is the study of man.

THE END.







Engr. by J. Sturtevant

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Drawn by Chas. Byrne

SOME ACCOUNT
OF
Dr. GALL's NEW THEORY
OF
PHYSIOGNOMY,
FOUNDED UPON THE
ANATOMY AND PHYSIOLOGY
OF
THE BRAIN,
AND THE FORM OF THE SKULL.

With the Critical Strictures of
C. W. HUFELAND, M. D.
AUTHOR OF THE ART OF PROLONGING LIFE, &c.

The finger of God hath left an inscription upon all his works, not graphical or composed of letters, but of their several forms, constitutions, parts, and operations, which aptly joined together, do make one word that doth express their natures.

SIR THOMAS BROWN.

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* The mark of Interrogation on the plate (?) denotes the seat of an organ, the function of which Dr. Gall has not yet ascertained.



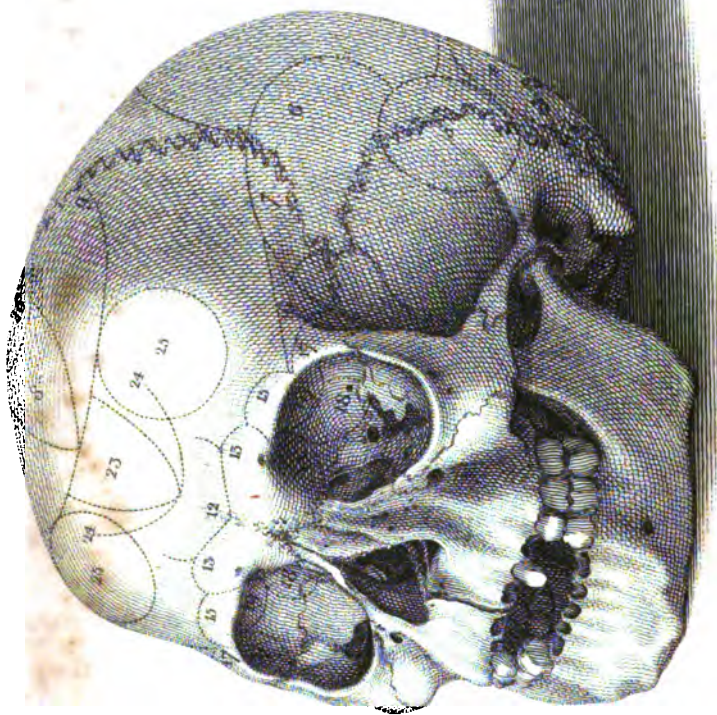


Fig. 1. A. J. S. 1807.

London. Published by Messrs. Longman & Co. 1807.

Drawn by Chas. Chene

PREFACE.

IT is a circumstance not very honourable to the state of science and literature in this country, that the recent discoveries, or pretended discoveries of a distinguished physician abroad, concerning the structure of the brain, as the receptacle of distinct organs of mind, and the form of the skull, as the basis of a new science of physiognomy; should have become an object of satire, before they have been fairly made a subject of examination. This new notion (for it does not pretend to be a system) of *Craniotomy* and *Cranioscopy* has become a theme of ridicule, and yet scarcely any thing has appeared in the English language on the subject, but some short essays in magazines, translated from German newspapers; which translated articles were written more in the stile of Mr. Bay's Comedy to "strike and astonish" than to convey a correct notion to

the anatomist or physician. That men of judgement should be inclined to smile at such accounts, is not to be wondered at; but we may regret, that they should be so ready to judge on such reports. It is true, the judge can decide only from the evidence before him, but he ought to know when the evidence is closed, and not preclude future enquiry by a premature decision.

I have seen a different conduct pursued on the continent, where the doctrine originated. I saw no want of laughs there, and certainly more opponents than favourers of the theory. I heard Gall deliver his lectures before an audience prejudiced against him, whom he offended rather than conciliated, by a coarse bluntness of manners, impatience of contradiction, and an unnecessary attack upon certain favorite metaphysical notions, which have but a very distant relation to purely physical doctrines: yet Gall was listened to patiently and respectfully. I found that men of the very highest distinction in general literature and science were curious to follow him in his discussions. I perceived that professional men of eminence were divided in opinion concerning the merit of his pretended discoveries in anatomy; and that some allowed of the worth of his anatomical

anatomical disquisitions, who would not admit of his theory of distinct organs. But I seldom heard the hard words and contemptuous epithets which have been so abundantly used in this country where so little is known. And amid the zealous opposition which he has had to encounter, his honesty and fairness as a reporter of facts within his practice and experience, have never been called in question: and from acquaintances (professional men) who have known in him Vienna, I hear that his practice is very large, and that he possesses the general esteem as a man and a physician.

Why then have the first reports of his doctrine been so unfavorably received here? This is doubtless owing, in a great measure, to the want of judgment in those reports themselves; but I fear also, much may be imputed to the spirit of nationality. Gall is a German, and we are Englishmen. Now I have observed that my worthy countrymen entertain a general presumption, that whatever is produced, either in the severe sciences, or elegant arts, on the continent, is unworthy our notice: I say *presumption*; I do not accuse my compatriots of being blind to established facts: where is the Englishman, for instance, who would deny that Italy has pro-

duced greater painters, and Germany greater musicians than ourselves? But I impute to them a somewhat too strong persuasion *a priori* of their own deserts, and of the demerits of their neighbours: hence a disinclination to attend to evidence, and a slowness in receiving foreign improvements. In some departments of knowledge, which respect rather the luxuries than the necessities of intellectual life; speculative philosophy, for instance, this may not be very injurious; but there are other walks of science, in which this obstinate inattention may occasionally become a serious evil.

That this is likely to be the case in respect to our author, I am by no means disposed to affirm. I am neither the admirer nor the partisan, nor even the judge of Gall: and have been induced to make this REPORT concerning his doctrine; rather from a sense of the indirect advantages which may arise from it, than from an high esteem for the doctrine as Gall leaves it.

There is one point of view from which it is impossible to contemplate the new theory with indifference. It presents a new field for experiment and observation. It furnishes materials for discovery, which the anatomist and physician have always in their hands.

The

The results which our author lays down are easily comprehended and learnt; the rules are simple and short; and tho' the application of them may not be easy to unprofessional men; nor any reliance be placed upon the vague observations of unpractised persons; still the man of scientific observation will not fail to avail himself of them. Our author states facts, not of individual observation and rare occurrence only, in which cases the utmost precision of statement, and the fullest evidence are essential to the worth of the communication; but he affirms certain universal laws of nature; every observer therefore will naturally renew the experiment stated. He will not try Gall's doctrines by the evidence G. himself brings forward; but by the proof which the nature of things brings with it, and which lies before him as well as Gall. The student of nature, when a new phænomenon is pointed out to him, does not require very exact information, in order to induce him to open his eyes and see: it is enough that the suggestion is not altogether frivolous and ridiculous. And he will be less disposed to apply these epithets, the more extensive and varied his knowledge of nature may be.

This is true in the sciences of mere curio-

sity ; but how strongly does it apply when the discovery professes to suggest new remedies for the most dreadful disease which affects our frame, insanity : and to instruct us concerning the ultimate cause and direct impulse to the most horrid crimes and calamities of life, murder and suicide !

These remarks have no other object, than to dispose the general reader to a candid and liberal perusal of these sheets ; and the professional man to a willingness, to try the observations within the sphere of his practice : for to professional men alone does the duty of judging belong, tho' the general reader will find much that is interesting to him.

Concerning Gall himself a few words more ought to be said. It is now many years since he has busied himself in those pursuits and speculations which are to be the subject of the following statement. As soon as the first vague notions were formed by him, he very laboriously employed himself in collecting skulls of every description, (which is much more easy in Germany than in England.) He caused models to be taken in Gypsum of living characters of eminence. He made great collections also of skulls of animals, and founded a cabinet of great extent and worth. As his ideas became more exact,

exact, he gradually made them known ; and delivered lectures on the subject. At length his fame reached the court ; and the Austrian government (under that fatal administration of bigotted and weak priests, which has at length brought down destruction upon it, and threatens to involve the ruin of all civilised Europe) thought it right to interfere : Gall was interdicted lecturing ; because his doctrine was said to lead to materialism and atheism !!! However he had already a numerous party of adherents, who had interest at court ; some foreign ambassadors, it is said, interested themselves in his favor, and he was allowed to read before *foreigners only* ; that is, Austrian subjects were prohibited attending his lectures.

At length, various unauthorized publications having been spread about the northern states of protestant Germany, and the public curiosity being excited, Gall resolved to deliver his lectures at the principal universities and large cities in the north of Germany. In his tour he delivered lectures at Dresden, Berlin, Halle, Jena, Weimar, Göttingen, Hamburg, &c. He was every where received with the distinction men of letters enjoy in Germany ; and was invited to table at the little courts where he remained ;

(in Germany a sort of criterion determining the rank and respectability of an individual.) Thus he fulfilled the double purpose of enlarging the field of his own observation, and conferring with professional men concerning his doctrines. That these latter gentlemen were in general not forward to oppose or confirm his theory in his presence, may be readily conceived. The contest generally began when the professor was departed. Every where, a contest arose; but I believe in most places the majority were against our lecturer.

It was in the course of this tour that the *present reporter* of his doctrine, attended his lectures; of which he was furnished with copious minutes, collected and collated by several medical students.

These minutes, he has further compared with three little publications by other hearers. Gall has declared his resolution not to write till he shall have completed a series of expensive and laborious engravings which are preparing, when he purposes to give to the world a voluminous, splendid, and as he thinks, decisive work. Of these little books by far the best is that by *Professor Bischoff* of Berlin; to which *Dr. Hufeland*, already known here by his *Macrobiotic*, annexed his opinion in detail. This opinion I have
thought

thought it right to translate entirely, tho' I could have wished it had been more compressed in its stile, and more confined to the medical and anatomical parts of the subject. The first of the following chapters, and the appropriation of the several organs to their seat on the skull, by the technical words used in osteology, I have also translated from Dr. Bischoff.

I have endeavoured to give as correct and copious a statement as my materials afford, without pretending to have any ultimate opinion on the doctrine; tho' I cannot avoid saying thus much of the teacher. He seems to possess the faculty of observation in a much higher degree than that of reasoning. He has acuteness in observing the individual appearances of nature, but is not always happy in the formation of general notions; and I fear too that he is obnoxious to the poet's couplet.

" To observations which ourselves we make
 " We grow more partial for th' observer's sake."

He forms his premises readily, but he makes his deductions incorrectly. As to the doctrine itself,

VALEAT QUANTUM VALERE POSSIT.

London, November, 1806.



CHAPTER I.

OF THE ANATOMY OF THE BRAIN.*

THE following is a brief summary of Gall's Observations on the Anatomy of the Brain.

The nerves of the body do not consist of any medullary substance, they are only fibres. These fibres spring from each half of the spinal marrow in various fascicles, which arise, by the side of each other, from the *cauda equina* to the *medulla oblongata*. These fascicles are separated by furrows and a pulp resembling the *substantia corticalis*. Each of these fascicles consists of fine fibres, which are not separated by any intermediate body.

* The unprofessional reader may pass over this chapter which is written more particularly for the experienced anatomist; while the doctrine of organs and general notions which follow afterwards, do not, in order to be understood, suppose in the reader any thing beyond the information which every man of education and general knowledge possesses.

In large full grown animals these fascicles may be easily separated.

Besides these nerves, which, issuing from the spinal marrow may be called the *diverging* nerves (*hinaustretende*) there is another sort of nerves, which bear to those the relation of veins to arteries, and are formed where those terminate; as for instance, the nerves which form the brain (*cerebrum*) in the cortical substance; these are the *converging* nerves (*zurücktretende*). But these converging nerves do not actually reach the spinal marrow, but entering, on their way, into the two hemispheres of the brain and the parts hitherto considered as belonging to the brain; they meet together in four *commissures* or sutures.

These nerves, thus eccentrically and concentrically formed, may be thus distinguished:—

1. The characteristics of the diverging nerves are;

a.) That they are harder to the touch, and may thus be recognised by a greater cohesion than the converging nerves.

b.) That they become stronger in their direction outwards, that is, from the spinal marrow to the surface of the brain.

c.) That

c.) That they, to that end, pass through Ganglia which the others do not.

The diverging nerves form, in their eccentric progress, the most important and largest congeries of nerves, which have an hundred thousand fold greater volumen than those nerves themselves. This could not be done did they not, on their way, receive a considerable increase. This takes place also in certain points of the cerebrum and cerebellum as in the *corpus olivare*, &c. And these Gall calls knots of nerves or ganglia (extending, as the reader will remark, the import of this term.)

These ganglia, when an incision is made in them, have a serrated appearance, with a colour mixed of yellow, grey, and red; and when touched, seem to have a firmer texture than the mass of the other nervous fibres, which proceed out of these ganglia, strikingly encreased in strength. That these ganglia serve to strengthen the diverging nerves, may, on inspection, be seen, and is further evident from this circumstance; that those nerves which are to be further spread as viz. the olfactory nerve in the whole of the pituital membrane, form more ganglia than other nerves which are less widely spread. The *cinereus bulbus* of the olfactory nerve is
nothing

nothing but the last ganglion which this nerve forms previous to its being spread over the pituital membrane.

Further, this law of the encrease of mass by means of a knotty swelling or tumour is confirmed by the structure of plants.

To return to the fascicles out of which the diverging nerves arise in the spinal marrow, and of which eight pair are already known; each of these fascicles has its certain function, and forms its own nerves and congeries of nerves, with which it therefore bears a fixed proportion, as for instance, that pair of fascicles, i. e. the *corpora pyramidalia*, which form the hemispheres or the cerebrum, bears always a proportion to the cerebrum. Where the hemispheres are large, the pyramids are large; and *vice versa*.

The order in which the most important of these eight nervous fascicles diverge and form the parts that belong to them is as follows.

First, the *nervus oculomotorius*, and the nervous fibres which form the *nervus accessorius*, proceed on each side, from the pair of fascicles which lie most on the outside of the *medulla spinalis*, and in particular of the *medulla oblongata*. The *corpus olivare* is on each side the common ganglion for these nerves

nerves, which they, being diverging nerves, require. When cut, the corpus olivare has the colour of a ganglion. The nervous oculomotorius can be traced into it.

More towards the middle of the medulla oblongata, is found that pair of fascicles which forms the cerebellum, and has hitherto been known by the name of the *corpora restiformia*; seu, *processus cerebelli ad medullam oblongatam*. Among *mammalia*, this pair of fascicles, as well as the cerebellum which is connected with it, is found largest in man. And among other animals it diminishes in proportion as the cerebellum and the sexual impulse connected with it diminishes; so that oviparous animals retain nothing but the *processus vermiformis*. That part of the cerebellum which lies on each side of the *processus vermiformis* is not formed by the *corpora restiformia* but by the *striae* of nerves which issue from the middle of the fourth ventricle, and appear on the medulla oblongata. That these nervous *striae* are not the origin of the auditory nerves, as *Sömmering* asserts, is proved by this, that they are not to be found in oxen, dogs, pigs, &c. who yet hear and have strong auditory nerves.

In this pair of fascicles also, which forms
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the cerebellum; the characteristic of the diverging nerves, is also to be found: viz. that they pass through a ganglion. The ganglion of the cerebellum is the *corpus ciliare* which lies in the *arbor vita*. This is seen by tracing the corpora restiformia as they enter the lower surface of the cerebellum (the brain being reversed) or making a cut in the cerebellum, directly from behind towards the front, on the upper surface of the cerebellum about the third of an inch from the border where the hemispheres meet.

After the nerves which form the cerebellum, have passed through this ganglion, they spread themselves eccentrically over the *substantia cinerea s. corticalis*, which surrounds alike the cerebrum and cerebellum. They form with this a nervous membrane, which in the cerebellum is plaited in parallel folds, but which may be unfolded as well as the circumvolutions of the membrane which forms the hemispheres.

Next this pair of fascicles, follow those of the auditory, olfactory, and optic nerves. As diverging nerves, they all pass through ganglia: the back pair of the four eminencies are the first ganglion of the olfactory nerve, as the front pair forms the ganglion of the optic nerve. These two nerves can be traced into their ganglia.

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The most important of these eight pair of fascicles is the middle one, which has hitherto been called the pyramids. This pair is the origin of the whole cerebrum or the two hemispheres: This is proved,

1. By the size of the pyramids being, in the various kinds of animals, always in proportion to the size of the hemispheres.

2. By the pyramids pursuing an uninterrupted course to the surface of the hemispheres. This takes place in the following way :

These fascicles first cross each other about an inch below the *pons Varolii*, so that each fascicle passes over to the opposite side ; and thus in the sequel the left pyramid forms the right hemisphere, &c. For, after crossing each other, the fascicles separate below the *pons Varolii*, and do not cross again ; and thus that which was originally the right fascicle continues on the left side.

From this crossing, which may be distinctly perceived if the medulla oblongata be properly cleansed from the *pia mater*, and the pyramids separated about the middle ; the diseased phænomena may be accounted for, which appear on the right side of the body after an injury has been done to the left hemisphere ; and on the contrary.

These broad fascicles or pyramids are, as diverging nerves, subject to the necessity of passing through ganglia; and, they in fact pass through two of them.

The first of these is the *pons Varolii seu protuberantia annularis Willissii*. This is, in part, a commissure of the diverging nerves of the cerebellum (which may be here anticipated) and in part a ganglion of the fascicles forming the hemispheres.

Even on the outside of the pons Varolii, but still better if (the brain being reversed) a slight superficial incision be made in it in the direction of the pyramids towards the *crura cerebri*, and the edges of this incision be carefully drawn from each other; the diverging nerves of both hemispheres of the cerebellum may be seen running across and meeting in the *pons* (or bridge) as their commissure. If these transverse striæ be pursued with the handle of a scalpel, or with a concave scalpel, somewhat deeper in the substance of the bridge, there will be met about one or two lines below the surface a layer of nervous fibres, running in a line from the pyramids to the *crura cerebri*. Between these nervous fibres running along through the bridge and those transverse striæ, is to be seen the cortical or cineritious substance

stance which covers the extreme surface of the nervous membrane, and forms, as it were, its last ganglion, as the organ of nourishment to the oblong fibres, which issue out of the bridge in a strikingly greater mass than they enter into it from the pyramids. If this layer of nervous fibres which runs from the pyramids along the pons Varolii be removed, a layer of transverse striæ is met with, which striæ returning from the two halves of the cerebellum, meet together in the bridge as their commissure. This layer of transverse striæ is succeeded again by an oblong layer of nervous fibres issuing from the pyramids.

Gall has at present discovered eleven layers of these nervous fibres, proceeding from the pyramids through the pons Varolii.

After the nervous fibres of the pyramids have in this way passed through the pons Varolii, as their first ganglion, and issued out of it much encreased, they form the crura cerebri, which, as observation teaches, are nothing but a continuation of the pyramids, or that pair of nervous fascicles which forms the hemispheres of the cerebrum.

The nervous fibres which form the crura cerebri, before they pass into the membrane, the folds of which constitute the hemispheres, pass through a second ganglion, that is, the

ganglion of the cerebrum, a part of the brain, the real form of which has been hitherto unknown, and still less its internal quality, but which is discovered at once when the middle lobe of the brain by the *Fossa Sylvii* is cut away. The whole congeries of the brain, and also the optic nerve around this, may be taken away. This optic nerve winds on each side of the front pair of the four eminences which are its first ganglion from behind, round that grey mass which forms the ganglion of the cerebrum, towards the front, in order to form the *decussatio nervorum optitorum*. Seen from above, or from the great ventricles or cavities of the brain, it is the *thalami nervorum optitorum* (which are nothing but a web of all the nervous fibres in the ganglion of the cerebrum, or are properly the ganglion itself) and the *corpora striata*, (which are properly the nervous fibres already diverging from this ganglion) which constitute the ganglion of the cerebrum.

That is, this ganglion consists of two pulpy masses crossed in the middle by the nervous fibres which spring from the pyramids, and have been strengthened by passing through the pons Varolii. If the brain be reversed, and the upper pulpy mass be carefully taken away, the nervous fibres can be traced from
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the crura cerebri entirely through the ganglion of the cerebrum. Each of the nervous fibres which are then seen forms a particular involution of the brain, and is to be considered as the organ of some intellectual function. After these nervous fibres have passed through the ganglion of the cerebrum enlarged, they diverge on all sides through the distinct involutions of the cerebrum, and forming a nervous membrane over the pulpy cortical substance which surrounds the whole brain on which they are spread, terminate in this pulpy matter, which constitutes, as it were, their last ganglion*.

In the same manner as the diverging nervous fibres of the cerebrum and cerebellum terminate, terminate also the diverging fibres of the other nerves which spring from the spinal marrow, in a pulpy substance, which is, as it were, their last ganglion, and in different places of different qualities. In the labyrinth, the pulpy mass, in which the progressive fibres of the auditory nerve terminate, appears like a transparent gelatinous body; in the nose, the pulpy mass in which

* Here the German writer has inserted marks of interrogation (??). An expeditious style of commenting, not unusual in German works, where the editor differs in opinion from the author.*

the diverging fibres of the olfactory nerve terminate, appears like a serous skin, the pituital membrane, &c. In some places this substance is woven into a hardish web of nerve, as, for instance, in the ganglion of the cerebrum (the *corpus ciliare*) and in the ganglion of the *nervi accessorii et oculo-motorii*, (the *corpus olivare*). In other places it lies like a grey pulpy substance, as, for instance, in the ganglion of the cerebrum and on the surface of the cerebrum and cerebellum.

Out of this pulpy mass in which, as before stated, the diverging nerves of the cerebrum, cerebellum, &c. terminate, the other kind of nerves arise; whether it be that the diverging nerves turn back again and converge, or altogether independently of them; that is, a second species of nerves is found, viz.

2. The converging nerves and congeries of nerves, which may be thus characterized :

a.) That they are softer than the diverging nerves.

b.) That they take their origin in that pulpy mass in which the diverging nerves terminate.

c.) That they unite and strengthen themselves in an inward direction, that is, from the surface of the brain, &c. to the spinal marrow; but they do not, like the diverging nerves,

nerves, go through ganglia, but rather avoid the ganglia of the diverging nerves.:

d.) That they meet together from the homogeneous congeries of nerve on both sides, and form commissures.

The commissures which *Gall* has hitherto been able to exhibit anatomically are :

1.) The commissure of the converging fibres of the auditory nerve.

It lies immediately behind and before the pons Varolii, and in men it is covered by it, but in other animals, as they have a smaller cerebellum, and consequently a smaller pons Varolii as its commissure, it is perfectly free and distinct.

2.) The commissure of the converging fibres of the olfactory nerve.

3.) The commissure of the converging nerves of the cerebellum.

This, as already observed, is formed in the pons Varolii. When the brain is reversed, the converging nerves of both hemispheres of the cerebellum are to be seen very distinctly running across and meeting on the pons Varolii. These, and the diverging nerves which run along from the pyramids, and are destined for the hemispheres, succeed each other in distinct layers, as already stated.

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4.) The commissures of the converging nerves of the cerebrum.

a.) The largest and most important of these is the *corpus callosum*. In this are united, not merely most of the converging nerves of the whole hemispheres, but also the remaining particular commissures of the converging nerves of the cerebrum.

b.) The *commissura anterior*, or the union of the converging nerves of the front and middle lobe of the brain above the optic nerve. The *Septum pellucidum* is a part or continuation of this commissure.

In animals whose middle lobes are smaller, the commissura anterior is weaker, and in these the olfactory nerve furnishes the same with converging nerves.

c.) In like manner, the converging nerves of the back lobes of the cerebrum form together a *commissura posterior*.

d.) Besides these commissures, the converging nerves of the cerebrum form both before and behind some other particular commissures on the *corpus callosum*, for constituting a sort of covering round it.

Besides the above mentioned nerves and congeries of nerve, there also proceeds a tender nervous mass from between the two halves of the spinal marrow, upwards through
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all the double organs which are formed by the nervous fascicles of the spinal marrow. This nervous mass is, as it were, the instrument of connection between the double organs, and appears on the great commissure the corpus callosum, as the *Raphe Lancisii*.

It may be proper to observe, that Gall was first led to that contemplation and study of the brain which ended in the doctrine above stated, by observing the phenomena of the *Hydrocephali interni*, in whom the whole brain is often stretched out into a membrane scarcely a line thick; hence he inferred that the brain cannot be, as is commonly fancied, a pulpy substance, but must be a membrane. About the same time certain pathological appearances, for instance, that the extremities are lamed by the hemispheres of the brain being wounded, evinced to him that an uninterrupted connection must take place between those hemispheres and the spinal marrow. He accordingly directed his attention to an anatomical exhibition of that membranaceous quality of the brain which he suspected from physiological reasons: and he was enabled, in opposition to all the anatomists of antiquity, and before all modern anatomists, to make this anatomical discovery, by pursuing a mode of anatomical research

research contrary to the practice hitherto generally observed ; that is, he traced the connection of the nerves and brain, not from the summit downwards, but from the spinal marrow upwards. In doing this, he followed the course which nature itself takes ; as in the higher and more elaborate organisation of animals, the commencement is, as it were, in the spinal marrow, and the brain is gradually and more subtly formed, according to the kind and rank of the animal in the order of creation. In the simplest animals, viz. the polypus, we see only scattered nerves ; in the next order of animals, we meet with a kind of stem, from which diverging nerves issue in more highly organised beings. In animals, still further advanced, the nerves springing out of both halves of the spinal marrow (for the spinal marrow, as well as the brain and all organs of animal life, is double) form, partly the brain, partly nerves ; all of which in fact spring from the spinal marrow, though they seem to have their origin in the brain, as has been already stated.

CHAP. II.

OF PHYSIOLOGY IN GENERAL.

THE anatomist is contented, when he detects a distinction of parts which is constant and invariable. This he marks and proclaims to his scientific brethren, and they not unfrequently, in grateful memory of his service, immortalize his name, by affixing it to the thing he first saw and made known (*pons Varolii*, *membrana Schneideri*, &c.). But it so happens, that the name of the discoverer is applied to the object, not because of the importance and value of the discovery, but, on the contrary, because for the present it is the mere detection of a thing, without the least insight into its functions and uses. It is impossible to look upon merely a picture of the brain, whether we take a section of it vertically, or survey its different layers horizontally, without being struck with the nice complexity

complexity of its organisation, and with our entire ignorance of the design and purposes of that organisation. This is more strikingly the case in examining the brain than in contemplating the other parts of the human frame. The ear and the eye also are subtly formed, but the principles of acoustics and vision are become objects of science—demonstrable science—which furnish us with a clue in examining the organs of sight and hearing. The organs of digestion, nutrition, &c. are also more simple, and have a reference to less complicated processes. It is in the brain particularly that the physiologist follows the anatomist humbly at a distance, and for want of certain data and experience, is forced to indulge in general observation and vague analogy. At the same time, all who are really interested in the progress of science, and who make liberal allowance for the imperfection of knowledge, gratefully receive the facts which the anatomist makes known, even when there is no prospect of an immediately useful application of them. And they also indulgently listen to the speculations of the theoretical physiologist, in the conviction that it is only by the freest use of speculating and thinking powers, that the understanding can be disciplined to adjust and appreciate

appreciate the facts brought before it. In the formation of science, the observation of individual fact, and the theory of general notions, setting out from opposite quarters, tend to the same point ; and it is by their union that science itself is established.

Thus, for instance, in respect to the brain and its functions, which form the object of this work : it is in general universally understood to be the organ of thinking. But thinking is only a general term, including a vast variety of intellectual phænomena, and the brain is, as we have seen, a very complicated organ. Shall we then rest contented with the general assertion, that the brain is the organ of mind ? or shall we not rather, looking more narrowly into the structure of the brain, consider, apart, in their relation to mind, those of its parts which are anatomically shewn to be distinct, in the same manner as the brain, considered as one simple substance, has formerly been contemplated ? We shall perhaps find that this more minute research is but a reasonable pursuit of the enquiry suggested by the first general observation. It is this which constitutes the subject of the following pages. Dr. Gall professes to have made this enquiry, and to have found that we ought not to content ourselves with con-
sidering

sidering the brain as the organ of thought, but as a congeries of distinct organs, the existence of which alone renders that great variety and diversity of talents possible, which distinguish the various individuals of the same species hardly less strikingly from each other, than man himself is distinguished from every other species of beings we know.

But before we enter into this enquiry it may be proper to notice an opinion that has of late years become popular, concerning the causes of that infinite diversity of intellectual power and moral character, which prevail in the world, which would, if established, render an examination into the physical organisation of man frivolous and useless. *Helvetius* has given currency to the notion, that men are born not only without character, but also absolutely indifferent to all character, without any tendency or disposition of any kind whatever. We all come into the world formed and disposed alike, and are purely the creatures of the circumstances in which we are placed. All the powers of the mind which have adorned but a few of our species, might (in spite of any thing contained in the first frame and organisation of the individual) have been the lot of every one of the thousands who daily come into
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and go out of the world, without leaving any other traces behind them, than in their progeny. This notion has been adopted by certain speculative men, from its imagined connection with the dogmata of materialism* and philosophical necessity: and in this country in particular, from its harmonising with the Hartleyan theory of association. But this notion could never gain credit with men in general; and for a reason stronger than all reasoning: We feel within us so decided a capacity for certain pursuits, and so utter a disability to follow others, that when we are told it might have been otherwise had we been otherwise placed in the world, the argument makes little impression; and we think we have done enough by asking, How can you tell that? And in truth, the objection implied in the question is well founded. It is in vain that Helvetius tells stories upon

* It deserves remark, that the doctrine of Helvetius, though in fact it has been patronised by materialists, is much more easily reconcilable with the immaterial hypotheses. For we are more accustomed to think the soul, the immaterial substance, to be simple and undivisible, than matter, which we know only as a compound substance. And one would have imagined that materialists would have rather attributed to an original diversity of material organization, the actual varieties in the character of men. This observation was made to me by a German friend; I am not aware that it has occurred to any of our English writers.

stories

stories (and they in fact alone have made his book popular) of a boy who used to be left alone in a room with a great clock, and afterwards became a great mechanic, &c. &c. The celebrated reply of *Themistocles* to his envious adversary, who ascribed his greatness alone to his being an Athenian, is a sufficient answer to all such tales. "I should not have been great if I had not been an Athenian, nor would you, were you an Athenian, have become *Themistocles*." The argument of *Helvetius* proves nothing, and avails nothing, against the consciousness of unequal powers, added to the daily observation of the early display of decided talents. *Mozart*, when he was in his fourth year, was already an excellent performer, as well as accurate judge of music. Besides, *Helvetius* qualifies his assertion by a *bien organisé* (well organised), and this qualification renders the whole doctrine frivolous and insignificant. For why should we suppose this organisation to be susceptible of no other modification than a *well*, why not a *very well*, *ill*, *very ill*, &c. This opinion has been adopted by persons very averse from speculating metaphysically concerning man. *Johnson*, for instance, (whom I quote here because he was *not* a man of science, though of great shrewdness in observation) considered Talents,

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or Genius, as he chose to call them, as-a thing that, when once existing, might be directed any way. Newton, he thought, might have been a Shakespear. For, said he, a man who can run fifty miles to the south, can run fifty miles to the north. The fallacy of the simile needs no detection.

But though the notion of Helvetius is offensive to our best feelings, it will be objected that the opposite doctrine which Gall lays down, and which is to be developed in these sheets, is not less repulsive. That consciousness of moral liberty which, in spite of the metaphysician's attacks, attends us perpetually, and which seems to be essential to our most important moral principles, (it will be said) is equally hostile to the theories of Gall and Helvetius. The one represents us as enslaved by the things which surround us, the other as determined by the fixed dispositions and tendencies of our frame.

The genuine student of nature will never be deterred from his pursuit by any objection drawn from either metaphysics or morals; he is sensible that the field of research which lies open before him merits his attention; and having faith in the ultimate harmony of the universe, he is not anxious to remove apparent doubts or difficulties. This

answer is sufficient for the better kind, but not for the greater number of enquirers. It is incumbent on him who is introducing a new object of attention, to remove all obstacles to its being impartially received and attended to. There is one plain answer to the objections taken from the notion of the freedom of the human will: That the *idea of ORGAN is that of an instrument by which a thing may be done, not that of an impulse which necessitates the action.* Organs of certain powers and capacities do not suppose the exercise of such power; hence there is still room left for the introduction of another principle if there be a necessity and a reason for it. It may be further said, that Dr. Gall's Organic Theory does not introduce a greater necessity than the popular opinion supposes: The undefined fact is already admitted, in the notion that the brain is the organ of thought. Gall does but go into the detail, and shews how that in fact exists which the other opinion only supposes. Equally unfounded would be the objection to Gall's Theory, as favouring materialism. G. very judiciously declines all metaphysical researches: it is indifferent to him, as it is to all whose object is the sensible world within the confined limits of external nature; what our opinion may be as
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to the *meta*-physical properties of man, the nature and relations of matter and spirit. These he holds to be irrelevant enquiries. It is enough for him, that the life of man is dependent on his sensible formation, and that there is a connection (tho' mystical and incomprehensible) between his intellectual and sensible qualities. He does not determine that the one is the cause of the other, but contents himself with observing as closely as he can, the concomitancy of the effect. He is employed in analysing the dust of the earth of which man is formed, not the breath of life which was breathed into his nostrils.

It is most obvious that if a particular doctrine concerning the physical nature of man is not to be invalidated by general theories drawn from metaphysics and morals, neither can any such doctrine arise from such theories. Hence Gall has been very anxious to shew how his opinions have always been grounded in particular observations; but whether the analogies by which he has generalised his particular observations have been drawn with sufficient caution, may be fairly doubted.

CHAP. III.

OF THE BRAIN AS THE ORGAN OF THE SOUL.

IN asserting that the brain is the organ of the soul, mind, or whatever we may please to call it, it is hardly necessary, now, to caution the reader against supposing that the brain is the positive principle of the mind or soul. It is but the instrument, or condition, without which the active principle, whatever it be, is inefficient. It is that part of the body on which the mind in a certain active state operates, and which must have a predisposed fitness to be acted upon.

That the proper function of the brain is not the mere support of the lowest degree of organic and sensitive life, is sufficiently proved by the existence of imperfect beings, children which have been born without head, (*ακεφαλοι*) and which have yet fulfilled for a short

short time the more essential functions of animal life; but such ἀνεφάλοι have never betrayed the least symptom of an higher intellectual life.

That however the brain is the organ of mere intellectual existence is not to be proved diffusely here, as this is the common notion, and not peculiar to the doctrine to be here stated. It is, however, evident, as well by the study of comparative anatomy, according to which it appears that the brain of animals increases in proportion to their advances towards mind or intellect. (And this assertion Dr. G. professes to confirm by a collection of wax preparations illustrating this progression :) as by the cases which so frequently occur in the practice of medicine, of wounds, blows, &c. by which the mind also is injured.

*Sämmering** first affirmed that the relation which is found between intellect and brain, lies in the quantity of brain compared with the size of the animal; but this is incorrect, for the canary bird has in proportion more brain than man. Then he qualified his position, and asserted, the dignity of the ani-

* An anatomist of high repute for many years at Mayence; within a few years he has been invited to Munich as member of the (now) royal German society, established there by the king of Bavaria.

mal to be found in proportion to the size of its brain in comparison with its collected nerves, and thus expressed, it will be found tolerably accurate: but even this rule is insufficient; we must have recourse to a consideration of the distinct parts of the brain, and then we shall find that the animal is advanced in intellect, in proportion to the size of the hemispheres of the cerebrum. This is confirmed by comparing the brain of man with that of other animals. On the contrary, those parts of the brain which seem to be devoted to the lower functions of organic and sensitive life, viz. those which are at the basis of the cerebrum and the cerebellum, are often found in a state of greater perfection in various animals than in man.

Against the assertion that the brain is the organ of the soul, several objections are advanced.

1. The case of *hydrocephali*, those whose heads have been filled with water, and who have yet retained their faculties. This objection supposes that the brain is macerated and dissolved in the water; and falls away if the supposition be refuted. The brain being, as has been shewn, nothing but a folded skin or membrane, is susceptible of being unfolded without being destroyed. This takes place
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in *Hydrocephali interni*, in whom water, being collected in the ventricles of the brain, by its expansive power unfolds the membrane of the brain, and presses against the internal surface of the skull. Dr. Gall attended several years a woman who had all the symptoms of water in her head, yet she retained her faculties; on her death he found four ounces of water in her skull, and it was on her that he first discovered, to his entire satisfaction, the expanded membrane of the brain. Gall considers the *hydrops externus* as comparatively rare, and advises physicians, in sawing the skull, to use the greatest precaution lest they cut the membrane at the same time; and it is to the want of this precaution, that he ascribes the mistake concerning this disease. He states as a symptom of the *hydrops internus*, the protrusion of the eyes out of the sockets, arising from the same expansion occasioned by the water. Life, therefore, may subsist for a certain time, though the brain is thus forced out of its place; for no substance is lost. Having, in a state of disease, discovered the membrane of the brain, G. then proceeded to seek it in the fresh brain of a subject free from any disease in the head; and he declares that on repeated trials he has found it. In the

only experiment which the writer of this account witnessed, a pipe was put into different parts of the circumvolutions or *gyri* of the brain, and by blowing, a sort of bladder was occasionally produced. The subject on which the experiment was tried had been taken from the body several days before, and was allowed to be unfit to give the experiment a decisive trial.

2.) A second objection is founded on the fact, that very considerable parts of the brain may be destroyed, either by an external wound, or from internal disease, and the powers of the mind yet remain unhurt.

This objection is satisfactorily removed by the *duplicity* of the organs in the brain; the sound organ on the one side being sufficient to fulfil its function, notwithstanding the destruction of that on the other side. It is found that the organs of sense and animal life are double, as eyes, ears, the muscles, &c.; while those which maintain what more resemble a vegetative or organic life (as stomach, liver, &c.) are single. It is true, the lungs, kidneys, &c. may seem to be an exception, yet they are not, from their inequality, to be considered as completely double, and these organs form a transition from the lower and organic, to the higher and animal life.

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Among the cases which G. stated to shew the possibility of life continuing after a partial destruction of the brain, was that of a clergyman who was under his care, and who complained that one half of his head was good for nothing, he could not think on that side, &c. He preached three days before his death, and on examining his brain, the side complained of was found actually mouldy; the other side was in an inflamed state. Analogous to this are the well known cases of Hemiplegy.

Against this notion of a duplicity of organs in the brain, the unity of perception and consciousness has been brought forwards. But the analogy of the external senses is a sufficient reply to this objection; the organ is not in the one case, any more than in the other, considered as the principle of sensation or perception, it is but the material condition of their exercise.

G. digressed here concerning the use of the double organs; it is enough briefly to observe that he is of opinion only one eye, one ear, &c. is employed at a time; and that these succeed each other in their operation. Probably, he said, the right side of the brain is the more active, as the right side of the body throughout, head, breast, eye, hand, arm, foot,

foot, &c. are generally the stronger. Eight tenths of those, he says, who have a hump, have it on the right shoulder, as the muscles on this side are the most active and strong. He carried these remarks (without laying any stress on them) so far as to observe that, when a boy, he used to ask himself how it came that men seldom walk quite straight; and that he imputed it to the successive use of each eye, by means of which the point of vision is changed.

3. The argument derived from the cases of petrifications in the brain needs no particular answer.

CHAP IV.

OF THE BRAIN, AS A RECEPTACLE OF DISTINCT
ORGANS.

IT has already been said, that each circumvolution of nerve in the cerebrum, is to be considered as the nerve or organ of some certain operation of mind : That hence, each internal operation, as well as each external sense, has its own peculiar nerve and organ ; and that hence, the brain is not *one* organ of the soul, not a common organ for all the functions of the mind, but a receptacle for distinct organs,

Tho' this assertion is far from being new, for we find it in *Boerhave, Haller, Von Swieten, Schellhammer, Glaser, Jacobi, Sömmerring, Tiedemann* and *Prochaska* ; and the academy of *Dijon* has even made the seat of these organs the subject of a prize dissertation ; still it is necessary to state the proof of
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this plurality of organs, which lies in the following observations and reasonings.

1.) *Gall* first urges, the sense of fatigue arising from the mind being long employed on one subject of contemplation ; and the relief and delight we experience in variety. This is analogous to bodily fatigue, which arises, not so much from a general exhaustion of muscular strength, as from the partial use and pressure of the distinct muscles of the body. When we have been long sitting we are relieved by standing ; and the bed-ridden find ease by a change of posture. That mental exercise is analogous to that of the body, as well in general, as in respect to the different kinds of employment, is very strikingly apparent. Every man, who is habituated to a life of study, knows, that after having spent hours in reflecting upon an abstract idea, or in labouring to analyse an intricately compounded problem of science ; when he feels exhausted by the intensity of his study, if he take up a work of fancy or taste, (nor do I mean here the idly taking up a book that neither requires nor allows of attention, but a work demanding, in the perusal, no less energy of mind, tho' of a different kind, than a scientific disquisition) he will find himself as fresh to the task,
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his comprehension as lively, his attention as ready, as if just arisen from the healthiest and most invigorating sleep. It has been said of some hard students, that they knew no rest but in the change of object; and we see that children never tire in their sports; partly (no doubt) because they are restrained by no laws of decorum from indulging in the utmost variety of posture and motion; they bring every muscle of their bodies into play; the vigour of their youthful frame soon exhausts each particular organ, but instinct leads them unconsciously to the easy relief; hence the restless impatience, and ever changing pursuits of childhood, equally apparent in the exercises of both body and mind. Let it not be said here, that this diversity of organs, which is supposed to exist in the brain, destroys the unity of the mind itself, for this argument is destroyed by the analogy here pointed out. It is *One* will which sets every muscle in motion, as well as *One* mind which acts in every operation of intellect: In both cases the mode of action is alike incomprehensible, and yet, where we have similar phenomena, it is but reasonable to suppose that the modes and principle of action are also similar. The complete analogy between the affections of body and those of the mind, compels us in all

all explaining theories or hypotheses, to suppose like impulses and adopt like language. The body longs for rest after much and varied labour, as the mind languishes for repose after active enjoyment. Hunger and thirst, repletion and satiety, are alike common to both. In most cases we know the seat of the bodily affections, as we know the parts devoted to the functions of life. And we know too that the mind, however immaterial we conceive it to be, has still a material seat, and that no simple homogeneous mass, but which exhibits a most delicate and complicated organization.

2.) Shall we persist therefore in considering this organ as one and indivisible, in spite of appearances, more particularly when we find that this organ, supposed to be one and simple, produces many and compound effects? Let us suppose the brain to be the one simple organ of mind and all its faculties; wherever we find any one faculty in a state of high energy, we suppose the organ also adapted to produce this energy. But how does it then happen that the same person is remarkably deficient in other faculties equally dependent on the same organ? If we think the brain to be in any way an instrument, it cannot be both weak and strong at once. But if it
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be the receptacle of many organs, they may be as infinitely diversified as the actions and powers of man. This argument receives greater force if applied to the brute creation, who evince also diversity of character, who have also a curiously framed brain, and to whom we do not ascribe a moral character, a freedom of the will, which so intrusively incumber our speculations concerning man. Whence are some of our domestic animals cunning and thievish, and resentful? Why are others generous and grateful? Why are some kinds of dogs particularly susceptible of instruction and of affectionate attachment? We are told it is their nature, their instinct; but surely their instinct is not a principle, but an effect of their organisation; and if this organisation lie any where, we may presume it lies in the brain. In like manner, the diversities of character in the same individual at different periods of his existence add force to the supposition of distinct organs, which grow to maturity and decline.

3. There is a third argument which is founded on medical experience as well as general observation; the brain is susceptible of being partially affected by disease, wounds, &c. the consequence of which has been the loss of certain faculties and powers of mind; and

and insanity very frequently assumes the shape of a partial disease. Instances will be given hereafter.

The notion thus supported explains many of the common phenomena of life, viz.

a.) *Watchfulness*, which is that state in which all the organs of animal life are at the command of our will.

b.) *Sleep*, (that is, healthy and sound sleep) which is that state when all the organs of animal life are at rest, (the organs of organic life are distinguished by never tiring.)

c.) *Dreaming*, which takes place when some one or more of the organs of animal life are in a state of activity, while the others are at rest. The activity of these organs awakens the consciousness of the others. Consciousness appertains to all organs, and has none of its own: Hence there is no dream without consciousness, however we may forget our dreams. During disease, there may be dreaming without sleep, owing to the disordered activity of certain organs, of this kind is *delirium*. In a state of *somnambulism* the whole vital energy is concentrated in certain organs, while the others entirely rest. And in the same way are we to account for the high concentration of power, the heightened sensibility, and the sudden bursts of intellect,

intellect, and the extasies of a disordered frame.

d.) Lastly, confirmed madness, or that disorder which consists in certain false notions and conceptions of things, which lies in the power of volition being lost over certain organs of intellectual life; and this arises from those organs (it matters not how) being in an highly excited or irritated state.

Such are the arguments *a priori* in favor of distinct organs in the brain; they can be confirmed only by those distinct organs, or at least their site, being pointed out in fact.— And in this lies the science, which Dr. Gall professes to have first discovered and made known to the world. I have used the term *science* here, not in its proper sense, but vaguely as we use it to express any knowledge, or any probable opinion founded on observation. The physiologist knows very well on what evidence his theories rest, as to the more obvious and palpable functions of animal life, and will, in respect to Dr. Gall's speculation, be content with proof as strong as the nature of the case admits, even should it fall short of the evidence which some departments of his science afford. He will not expect that the organs should be laid before the eye, in like manner as the muscles of

the body may be laid open. He will be content if any uniform appearance justify our supposing an organ; and if the result of a long observation of this uniform appearance, be the detection of a certain relation which it bears to the phænomena of character, he will adopt, as a matter of opinion, what may never be scientifically demonstrated, being always guided by analogy, the sole basis of experimental deductions.

The physiologist has observed in the animal creation, that the nerves of those animals which are distinguished for smelling, seeing, hearing, &c. are marked by being numerous and large, evincing a more elaborate developement. And having been accustomed to see the olfactory, optic, and auditory nerves in animals *proportionally* large with the senses they severally furnish the individual with, he will draw the general inference that *wherever any organ is met with in a higher state of developement, there we may expect to find the power dependent on it, in corresponding energy.*

CHAP. V.

OF CRANIOLOGY AND CRANIOSCOPY.

BUT the living brain can never be exposed to observation; and from the nature of its substance, loses much of its form and texture soon after the death of the subject.

The inference therefore of the physiologist concerning the organs of the brain would avail him but little, unless some certain connection were ascertained between the brain and its permanent covering, the skull. This connection is asserted in the following fundamental position.

*“ That the internal lamina or plate of the
 “ brain-pan or skull is, during the life of man,
 “ perpetually formed by the brain itself: And
 “ that therefore where the internal and external
 “ plates of the skull run parallel, we may infer
 “ the form of the brain from the outward
 “ shape of the skull.”*

On this fact, and on that before stated, that each of the circumvolutions of the cerebrum consists of an organ of some intellectual or sensible power, the greater size and development of which would of course give the skull its peculiar shape, rest the sciences of *craniology* and *cranoscopy*. The one of which asserts that the shape of the skull gives the law, by which, not the actual character, but the tendencies and dispositions towards character in men, are determined ; and the other asserts, that that law can be discerned and ascertained by contemplating the shape of the skull.

The merely observing the process of ossification, is sufficient to suggest, that the bone is essentially the passive result of the more active and finely organised matter to which it is attached ; and this is further confirmed by its subsequent diminution, and the mode of its being affected by the diseases of the brain. When the brain, with its three coats or skins, the *pia mater*, *tunica arachnoides*, and *dura mater*, which attend it in its circumvolutions, is already perfectly formed, there forms itself on eight parts of the external skin, a point of ossification, at which a slimy matter exudes ; this hardens, lines diverge from it in every direction, and at length the eight bones of the

the skull are formed; these lines of concretion firmly attach themselves to the dura mater, they harden, meet at the sutures or seams, and complete, after the birth, the covering of the skull.

The best commentary upon, and deductions from this statement, will consist in answering the objections made to the general theory.

1.) Can we infer the form of the internal plate of the skull, from that of the external plate? Answer. The *laminae* run parallel till the individual is about forty years of age, later in life variations take place, as well through age as disease, which will be noticed; and the power of inferring the one from the other suffers restriction.

2.) As the brain is of so soft, almost fluid a substance; is it found that the organs retain the same place in the brain, so that they can be with certainty recognised? Answer. Observation shews that the folds and circumvolutions of the *cerebrum*, in the more simple animals, are quite symmetrical; and in man, nearly so. And tho' the extent and boundaries of the organs may not yet be always determined, their relative position and their relative perfection may be ascertained.

3.) Is it not more probable that the form of the skull being determined at the birth, fixes that of the brain?

On no account; for whatever violence may be done to the bones of the skull during the birth, those bones return into their natural state, partly from their elasticity, partly from the active power of the brain working outwards. It is only when the bone is broken, and the brain itself is injured, that the intellect is affected, and that the skull retains the form which violence had impressed on it.

Gall produced, in confirmation of this statement, the remarkable skull of a man full grown, which was at the birth broken by Levret's forceps on both sides, and never recovered its form. The mark of the forceps was distinctly observed on the outside; but the internal lamella had no impression upon it, because not being broken, the power of the brain had restored it to its original shape. Yet from the thinness of the internal lamella, and the violence with which the forceps forced in the outer lamella, it having, by touching the inner lamella, destroyed the diploe between, it cannot be doubted that some violence must have been done also to the inner plate.

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The principal cause of this activity of the brain operating outwards, lies in the regular motion of the brain occasioned by the circulation of the blood : this is the reason why swellings and *aneurismata* in the membranes of the brain never work inwards but outwards ; that in case of wounds upon the skull, the mass of the brain presses outwards ; that the vessels of the brain and its coats press upon the internal lamina of the bone. And this is in like manner the reason why, when at the birth, the bones of the skull are pressed or pushed wrong, without being broken, the brain under the place suffering violence, instead of being paralysed and destroyed, recovers itself by its own energy, remedies the injury, and forces the parts into their proper place. How otherwise do the heads of animals recover their shape, which are often pressed in during the birth ?

4.). But are not the most important organs of animal life and of the intellectual functions, formed *after* the birth, and long after the skull is completely formed ? It is ascertained that certain organs are formed after the birth, and G. himself asserts that the brain alters its shape in conformity with such subsequent formation.

It is necessary, in order to explain this, that we anticipate in one or two points, the enumeration of the organs. G. observes, that a very prominent swelling of the forehead is characteristic of young children, and that as they advance in years this protuberance diminishes, and the forehead retreats. There is another observation which every one has made, that the faculty and the habit of attention is peculiar to children, that they have a facility and felicity in making observations which seem to surpass what we afterwards remark in them. Hence, says Gall, the aptness of most parents to imagine their children, in whom they remark this sagacity, are possessed of singular talents; when a few years are passed over, the wonder ceases, and the miracle of three or six years old is an ordinary boy at ten or twelve. G. connects these observations together by placing the organs of observation in this district of the *os frontis*, as will be afterwards more particularly pointed out.

This is also confirmed in the organ of the sexual impulse, which is seated in the *cerebellum*, as will be shewn hereafter. It is known that the cerebellum is, in proportion to the cerebrum, very small in children, compared with its size in adults. The gra-
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dual developement of this organ may be perceived by comparing skulls at different periods of life. In children, for instance, that part of the skull which corresponds with the cerebellum, between the two mamillary processes of the *ossa temporum*, measured across, occupies one inch and an half; and at the same time another part of the skull corresponding with other organs, measured, between the same processes and the summit of the *osse parietalia*, three inches. But with encreasing years, as the sexual impulse and its organ are more and more developed, this proportion is no longer to be found on the skull; and the space between the mamillary processes approaches (as is demonstrated by a comparison of skulls of all ages) the breadth of the skull between the mamillary processes and the summit of the *osse parietalia*; till at length, when the individual has arrived at his full growth, it equals and even surpasses it.

If this active power of the brain in forming the skull, which passively yields to all influence from within, while it resists all pressure from without, be established; how are we to account for the facts stated by travellers concerning the artificial modelling of the head by savages. G. objects to these
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statements, and considers them as not being entitled to much weight, from their not having proceeded from anatomists, and not being confirmed by any skulls brought into Europe for examination. He knows, he says, that nothing short of extreme violence could produce any permanent effect upon the shape of the skull; and he appeals to observation. There are many provinces of Germany in which persons, and particularly women, are accustomed from their infancy to carry heavy burthens upon their heads, but though this has subsisted for generations, it is not found that any flatness is prevalent on the skulls of such people. But where the bone has been broken, it would follow that if death do not ensue, yet the organs immediately under the injured part would be paralysed and injured; hence it is found, that the same travellers who give an account of the deformity thus violently caused in the skull, also relate that among the same people extreme stupidity and idiocy are very frequent.

5.) But does not ossification proceed according to certain laws of crystallisation, according to which we assume that the *sinus* of the *os frontis* and the upper jaw bone arise? How then can the brain determine the form of the skull?

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To this it may be answered, that we find in the whole œconomy of nature, that the law by which the inferior organisation proceeds is, in a manner, subdued and rendered of no effect by the action of higher laws. Thus, during the existence of animal life, we find the mechanical and chymical properties of matter, as it were, suspended. In like manner, here too, the laws of crystallisation are rendered invalid by the superior energy of the living brain. Besides this, we often observe that the brain has power to restore the inward lamina of the skull on which it immediately acts, while the outward plate retains its injury. As after trepanning and wounds, and where the sutures separate in an *hydrops cerebri*, only the inner, not the outer plate, is restored; yet if the process of ossification were independent of the brain, we might expect a like reproduction of both. On the other hand, where the brain likewise is injured, then the inner plate is not restored, and disease always remains. The cases of *hydrops cerebri* strikingly shew the power of the brain; the skull swells enormously, and the membranes, which before united the bones, themselves harden to bone. These statements were confirmed by the production
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of a skull on which this partial reproduction, &c. could be perceived,

6.) It has been suggested that the form and eminencies of the skull may be attributed to the action of the muscles affixed to it, as we see that the muscles elsewhere form such eminencies and protuberancies. But this objection is sufficiently refuted by the impossibility of the muscles acting on the inner plate of the skull, with which the outer plate runs parallel, even in advanced life, and when the laminæ are at a distance. Besides this, there are parts of the skull marked by protuberancies, which are not covered with muscle; as for instance, the swelling of the upper part of the *os occiputis* in women (the organ of parental affection) which is much stronger in them than in men, and on which no muscle acts.

7.) But if the growth and developement of the brain and its parts have influence upon the form of the skull, in like manner the decrease or diseased imperfection of the brain should also affect it.

And this is found in fact to be the case. When in old age the powers of the mind decay, the brain also, as it were, shrinks; the circumvolutions sink in, and interstices are formed.

formed. In this case, either both plates of the skull gradually retreat and sink in, after the brain (and this generally takes place on the forehead first) and thus the head becomes smaller in general, as our daily observations upon old people may convince us: Or the skull itself becomes thicker, either by a new mass of bone forming itself in the place of the shrunken brain; or the inner plate alone shrinking, a fresh mass of diploë is collected between the two plates of the skull. Hence it happens that in old age the head always becomes smaller or heavier, and sometimes both.

It is not only in a state of health that the skull is modified by the brain: The disease of the brain will also produce a diseased form of skull, which thus serves as a diagnostic sign of the disease of the brain.

In an *hydrops internus*, the *ossa parietalia* are pushed outwards: But at first the water presses downwards, makes the *basis cranii* flatter, and the orbits narrower, so that the eyes are pressed out.

Gall produced the skull of a boy seven years of age, who died of a consumption of the brain; the skull was unusually small, and Gall stated this as an instance that frequently occurs, and shewing how the growth of the
skull

skull was impeded by the disease of the brain,

Another phenomenon attending the shrinking of the brain, was stated by Gall to be not unfrequent, and leading to the same conclusion: that is, the hollowness and deepness of the orbit of the eye, the lamina of which retreats backwards with the shrinking brain.

But the more important cases on which Dr. Gall relies are those of lunacy, confirmed madness, and a disposition to commit suicide. With respect to these, Gall professes to have been led by his theory of the brain and of its organs to adopt modes of cure which have been successful, and which promise to be of great value to the practising physician.

When lunacy has lasted long, one part of the brain shrinks away after the other, till confirmed incurable insanity is the consequence. The effect of this is, that the skull becomes always smaller and generally more heavy, thick, and dense; from the accession of bone and diploe, as before stated. By lunatics too the same appearances take place.

Gall has also found in suicides, the same thickness and weight of the brain; and he ascribes self-murder to a general disease of the whole brain, and considers this fatal deed as
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generally within the sphere of the physician rather than of the moralist. He ascribes therefore no organ to the love of life.

Where the disease of the brain is topical, there too the skull is partially affected. Where the brain is generally diseased, the skull betrays the evil by its general appearance; it ceases to grow, and a remarkable smallness and thickness of skull is apparent, not only in idiots, but in whole races that have been brutalised by long subjection and slavery.

These observations were made by Dr. G. as the result of many years practice, and with a particular attention to the subject. Here too he related a number of cases, the enumeration of which would be here irrelevant. He accompanied these statements by the production of skulls of very unusual thickness and weight: one of them, which weighed twice as much as another skull of an adult which was produced for other purposes, he stated to be that of a poor man, who had all his life been known as an industrious, sober, and honest man, but of a melancholy temperament: on a sudden, tho' no motive, adequate to the action, could be discovered by those who were acquainted with him, he killed his wife, several children (all of whom he loved tenderly) and then himself. G. stated expressly

expressly, that he had never known either a lunatic, madman, or self-murderer, on whose skull some unusual appearance either in the particular formation, or general texture was not discoverable. He considers the fundamental causes of these diseases to lie in the brain, which however he supposes to be strongly affected by the climate and weather. Among the external causes, he imputes much to a moist atmosphere, and has remarked fatal effects in Germany from a prevalence of the south wind.

CHAP. VI.

OF ORGANOLOGY AND ORGANOSCOPY.

HAVING shewn by arguments *a priori*, that we ought not to be content with a general reference of the mind as *one* faculty, to the brain as *one* organ; but that as we are conscious of diverse powers of mind, and observe that the brain is a various substance; we may assume in both equally, a distinction of parts, tho' those parts may be ultimately so united as to become one; we ought hence to seek at least to ascertain the relation of these several parts to each other: And having proved that the skull is modelled by the brain, and that therefore we may avail ourselves of the hardness and permanent form of the one, to discover what the softness and perishable nature of the other would not permit our finding directly; we might proceed now to the statement of those organs individually: but it will be necessary previously

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to make a few remarks on the kind of qualities and powers for which organs may be expected, and the kind of evidence, and means of enquiry, which the nature of the science admits.

It is observed by *Helvetius*, that all new ideas come into the mind unexpectedly and by chance, that they cannot be sought or anticipated; a remark unquestionably just, for otherwise the ideas would not be altogether new. The commencement of every science proves this fact, but the progress of the same sciences also proves that, however gratuitously the elements of knowledge are given us, there is in man a power and an impulse to take the work of chance under the direction of his own thinking and anticipating mind. However few the data may be with which he is furnished, he instantly generalises his observations, makes systems, plans experiments, fails in them, is helped in his progress by new accidents, amends his theory, reverses it, discovers new properties and powers, and goes on daily in adding to the mass of his individual observations and facts; but still he is unsuccessful in his attempt to bring these observations to unite and bear upon one great result. The lovers of science, in the course of its progress, naturally

rally arrange themselves under two great classes, one of which seem to regard the individual facts they learn, as of no value, except as they lead to the one great idea they are seeking; and these are the *metaphysicians and speculative philosophers*: And they would willingly dispense with all individual things, and single phænomena, could they get at their theory and system without them. The other party consists of those who are searching in all directions for something new; they hoard up every discovery with much indifference as to its tendency, regard the quantity more than the quality of their information, and absolutely despise all general views and notions of things. These are the *experimentalists—the matter-of-fact men*. But as their aim is still the acquisition of more knowledge, and as facts and things do not generally present themselves to those who do not seek them; they have no means of acquiring further knowledge, but by arranging and classing that which they have already, generalising, in some measure, their notions, and pursuing their researches by something like a theory and system, though it may not look far, or be very complete. Thus it happens, that in the progress of science we are reminded of the ancient fable of The Blind

Man, and The Lame Man, who were obliged to unite their powers in order to proceed on their journey. But the union, though necessary, is not cordial; hence we see speculative and practical philosophers, as they are called, much more intent to decry the powers of their rivals than to borrow their aid.

Gall is an instance of this. Professing to be a mere observer of the phænomena of nature, he is a despiser of all speculation and metaphysics. And no one has suffered more than himself from this narrowness of mind; for as in spite of himself he must have something like a theory and system, as he cannot state his observations but in general words, as he must draw something like a conclusion, he finds himself within the territory of metaphysics before he is aware of it. Here he shews himself disadvantageously, not having been in the habit of scientific reflection and abstraction. As he has not even a language adapted to the subject, no chart of mind previously drawn, he is utterly unable to generalise his observations with taste or propriety: Hence his doctrine has often an absurd and ridiculous appearance, which the possession of other than experimental habits and talents would have enabled him to remove. These remarks I thought necessary
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excellence, and more perfect construction of this internal sense, which we may call the power of thinking, lies the superiority of man over the brute creation. Many animals surpass man in the delicacy and force of the external sense, yet man has more knowledge of the external world than they; because he has a sense or organ to perceive more relations and modifications of that world than they perceive, in other words because he has *mind* pre-eminently, if not exclusively.

What then are the modifications of the external world which man perceives by means of organs; and which of these organs are to be considered as independent and self-subsisting?

In general we call the power man possesses *understanding*, that of the animal, *instinct*. But, considered in themselves, instinct and understanding are not different. Power and sense are the basis of both. In both is impulse, which we name differently, according to a circumstance which is merely accidental. We call the impulse, which is understood by the subject in whom it resides, *understanding*. When we wish to express that the impulse is not understood, we call it *instinct*.

In men and animals we are alike compelled to assume the existence of an organ corresponding

sponding with every individual exercise of power. How otherwise can we explain the various distinct impulses or instincts of animals ? To answer that they arise from a necessity implanted in the very natural constitution of the animal, is re-stating the difficulty, not answering it. All enquiries into the nature of things take for granted the necessary existence of each individual thing, and seek to ascertain the relations and connections between the several laws of existence by which each thing exists apart ; so that one law or necessity springs from the union. Hence we derive the idea of instrument or organ as a mediating causal substance. But it may be said, the instincts of animals arise from the feeling or consciousness of necessity ; but this consciousness, did it really exist, would not imply the power of acting conformably with its dictates. Besides, among what are called the instinctive actions of animals, are many which suppose an impulse beyond the sense of necessity or the feeling of present pain : we witness foresight, the choice of means, &c. Neither are the manifold impulses of the animal world to be referred to one simple impulse, that of self-preservation.

There are also many phenomena in the history of man which oblige us to have re-

course to a natural impulse or tendency to certain actions. There are instances in which an inclination to steal is found, which neither natural nor social wants can have generated. Affluent persons, nobles, and princes, have felt this impulse. The most abandoned and profligate people have evinced a singular attachment and fidelity in their friendships. And in individuals are found the most astonishing inconsistencies of character; religious sentiment has been seen in a high degree united with gross immoralities, which imply contrary tendencies, in the same character.

With respect both to animals and man, we can expect to find organs only for those distinct, individual, decided capacities and inclinations, which are the basis of the affections and actions of both. For the following appearances, therefore, we ought not to expect any organ.

1. For those talents and capacities which are the result of a number of powers united; as those of the poet, astronomer, &c.

2. For those powers and qualities which are common to all capacities and organs, and which therefore imply only different degrees of those capacities, as for instance:

a.) Susceptibility of impression is common to all organs; for the organ can be operated upon only by means of its being susceptible of impressions.

b.) Memory

b.) *Memory* too is common to all organs, for it is founded upon, and subsists in the exercise of the organ: we do not seek therefore for a memory in the abstract, but for a memory appertaining to particular objects, as musical, local, arithmetical memory, &c. And it is in fact found that the excellence of the memory of individuals is confined to those objects. the organs of which are in them peculiarly developed.

c.) *Judgment* also, is nothing but a heightened sense produced by exercise, and referable to the individual objects and organs: hence in the distinct arts and sciences in which men may excel, we find they possess the soundest and surest judgment, though on all other matters their understanding may be weak.

d.) *Imagination* or inventive power, is a still higher excellence, and *Genius* the most perfect developement of that organ, or of those organs, in individuals, in whom one or more of them may be found in this exalted state. We find some men endued with specific talents, a sort of insulated ability, while others, from the variety of their powers, are denominated universal geniuses, however incorrect such an appellation may be.

3. For the different degrees of *sensibility*,
as

as inclination, desire, passion : these must be referred to the individual organs, whose developement produces respectively the various degrees of desire.

4. The *affections* likewise are but modifications of other organs. *Joy* results from the harmonious energy of our different powers : *sorrow* is the dissonance of those powers in their exercise.

5. *Conscience* has no distinct organ. As we observe that some persons can perform the most atrocious deeds, without evincing any remorse or uneasiness, we might infer, that conscience too had its peculiar organ, the want of which might occasion such observation. But conscience is too complicated to be referred to a simple organ ; its pleasing or painful impressions are the result of the concord or discord of our conduct with our notions, in which the most artificial and accidental motives take part.

In answering the objections made to the doctrine, that each definite impulse has its peculiar organ, Gall takes needless pains to obviate that arising from the freedom of the will, of which he gives a definition that will hardly satisfy any party. Freedom he considers as founded on the greater or less susceptibility of motives ; and man has more
freedom

freedom of the will than other animals, because, in addition to all the sensual impressions, he can receive and obey the suggestions of morals, &c. In asserting the propriety of perpetually comparing man with the animals, he asserts, in opposition to *Cuvier*, that no animal has any organ in its brain which man also does not possess. Man unites in himself all the organs which are variously scattered and dispersed among the brute creation, and is therefore the representative of the animal world. But he has also organs in his brain which no other animal besides possesses, and these are the seats of those powers which are the prerogative and glory of the human race, as, for instance, *Theosophy*. Gall allows that it is frequently difficult to carry on the comparison in the anatomy of the human and animal skull, and frequently confesses his doubts, as for instance, whether the organ by which an animal has a love of high places, be the same which we find in man pointing out in him moral loftiness or ambition.

However Dr. Gall may, in spite of himself, speculate as to causes, and indulge in abstract statements, in his endeavours to render his doctrine intelligible and plausible, still in his proofs and direct arguments he confines himself to observation; and instead of
boasting

boasting that he was generally fortunate in discovering at once the organ which he was seeking, he relates with satisfaction the many mistakes and false conjectures which he made before he succeeded in fixing upon the right explanation.

From his earliest infancy, natural history was his favourite study, and his great delight consisted in collecting plants and animals of every kind, and classing them, not according to the method pointed out in books of science, but according to their obvious and sensible differences. As he grew up, he fixed upon medicine to be his profession, and was led by an impulse, which he of course considers as the result of his peculiar organisation, to the habit of observation and comparison. He was very early induced to remark the various shapes of the heads of his companions and fellow-students, and to connect these peculiarities with their moral and intellectual character. Having remarked in some cases a striking conformity between the general form of the heads of those who also resembled each other in mind and temper, he inferred the general character from the general shape of the skull; but unfortunately he found, on further examination, as striking a disagreement as he before remarked a certain correspondence

pondence in these observations. This forced him to retract his former general inferences, and be more precise in his remarks. He then began to direct his attention to the individual parts of the skull, and here he found less inconsistency in his particular deductions; but he was frequently forced to shift his ground in assigning the local organ he assumed. At the same time, he called to his aid the observations of comparative anatomy and professional experience; and after many years long and constant observation, he thinks himself justified in giving the result to the public, as facts proved by experiment, not as principles or rules susceptible of demonstration.

It may be useful to state more precisely the rules of observation by which he challenges the public, and particularly professional men, to try his statements: having faith in the uniformity of nature, trusting that what he has long uniformly seen, others will also invariably remark.

1. By a close observation of living persons in a state of health, carefully feeling and correctly noting the eminencies on the skull, each of which he considers as an organ, using that term in expressing the *continenſ pro contento*; and considering that only as skull which immediately covers the brain.

This

This observation has taught Gall, that persons eminent for certain talents have certain eminences on the skull, the seats of which are capable of being ascertained and pointed out* : while those who are altogether destitute of such talents, have a sinking or depression of the skull on this part. In order to make this experiment with success, Gall recommends it to be tried, not on common, every-day persons, but on those who are marked by strong peculiarities of mind and character : for perhaps every man has every kind of talent and tendency, though in so slight a degree as to be unproductive of any effect, from the stronger influence of other powers : hence the difficulty of determining the peculiarities of those who manifest mediocrity in all things, eminence in none. He also prefers subjects uneducated and uncultivated, as the natural tendencies of their character have been left more to themselves, while the polish of social life tends to rub off the prominent peculiarities of individual formation. In feeling for the organ, he recom-

* But only to the experienced observer. Gall deprecates the hasty and presumptuous stile of *organ hunting*, by which many of his disciples expose themselves and the doctrine to ridicule. He would for the present confine to professional men exclusively the practice of the art.

mends the use, not of the fingers, but of the middle of the palm of the hand ; and declares that habit, as well as a certain natural delicacy of tact, is necessary to qualify a person to make these observations with certainty of success.

2.) But some of the organs lie at the basis of the skull and on its lower surface ; these must be sought for after the death of the subject.

3.) The observation of persons during a state of disease.—This is particularly applicable to diseases of the intellect ; it furnishes Gall's Theory with some of its best arguments and illustrations, and suggests some important and estimable practical benefits which may be drawn from it.

Insanity is, in the opinion of Dr. Gall, a disease of the brain ; and as we observe a sort of partial insanity, so G. is of opinion that parts of the brain may suffer a peculiar affection, while the other parts are left comparatively in a healthy state : but that the whole brain would be in a very dangerous condition, is as obvious as the want of confidence in a person lunatic, or partially insane. Supposing there is in the brain generally a tendency to disease, Gall is of opinion that the prominent and eminently developed organ would be peculiarly liable to be affected.

Hence

Hence Gall asserts. an ability at all times to determine, upon an examination of the skull of a lunatic, in what way his insanity betrays itself, even if such lunatic should have avoided every actual expression of it. In mad people who have fancied themselves to be God, or Jesus Christ, or at least inspired prophets, as well as in those who suffer the agonies of religious despair, he has uniformly found the organ of Theosophy. Thus it is, that the fixed ideas of the insane are determined by their organ : and wherever any organ is found in a very high degree, there is always danger lest a disease of the brain should produce a corresponding madness : at the same time it is possible, that where the profession and habits of men lead them to exercise a particular organ, and set it in a condition of great activity, though by nature there may be no peculiarly marked organ, yet that the disease may fix upon the organ so put into activity. And as the influence of life and habit upon the organ is as sure as that of the organ upon life, Gall advises, that in many cases persons should try to resist the tendency of their minds, by following pursuits altogether the reverse : for instance, if he knew a young man of a melancholy turn of mind, full of nervous sensibility, conscientious

entious and scrupulous, in whom also the organ of theosophy should be found in a high degree; instead of allowing him to follow what would probably be the bent of his inclination, the profession of divinity, he would urge him on the contrary to pursue an active life*. This observation has led Gall to the application of cooling remedies on that part of the skull where the organ lies, from the diseased activity of which the disorder proceeds. It being the same thing whether we affect the habits of thought and ideas, by diminishing the activity of the physical organ producing them, and whether we diminish the activity of the organ, by forcing the mind to other pursuits; that is, by rousing other powers, and setting other organs in motion.

4.) By observing the influence which wounds and injuries of the brain have, upon the intellectual powers and inclinations of men.

* I cannot avoid noticing here, that many years since, the greatest poet of Germany, GÖTTE, in his admirable novel, *Wilhelm Meister*, taught this same important lesson, certainly on very different grounds. He introduces a pathetic case of insanity, arising from a father's determining the profession of his son by his ruling passion; and he indirectly suggests the wisdom of often counteracting rather than obeying the inclinations of early youth.

But this rule of observation is rendered very uncertain, from the impossibility of determining with accuracy the part of the brain which is affected when we know the part of the skull which is injured : and even if we discovered an injury in the brain itself, still we could not infer which organ had sustained most injury, as in cases of wounds it is often found that parts of the brain not immediately wounded, suffer more in the dissolution or destruction of their organisation, than the parts directly touched and wounded. After the brain has been so shaken as to occasion death, it has frequently happened, that nothing could be discovered but a diminution of mass. In such cases we cannot possibly say that the brain has not been disorganised, and yet the place of the disorganisation cannot be pointed out. This also applies to the observation of the effect arising from the application of topical remedies to the skull, in cases of insanity, where fixed ideas prevail, &c. ; and yet Gall requires that this circumstance should not be neglected in determining the organs. There is another objection to the inference which might be drawn from wounds and injuries, in ascertaining the seats of the different organs ; and this arises from the duplicity of those organs. For as the organs for
the

the operations of the mind, as well as those of animal life, are double, it may easily happen (particularly when they do not lie near each other) that one of them only may be injured; and thus the function may be continued, tho' one of its organs is destroyed, as the sight remains after the loss of one eye.

This is the reason why the experiments of *Arnemann*, and those instituted by the Academy at *Dijon*, in order to determine the seats of organs in the brain, by destroying certain parts of it, were so little satisfactory, and led to no important discovery.

Further, as we experience that a diseased state, and the diseased irritation, will cause an encrease as well as a diminution or annihilation of its activity; hence we must avail ourselves of such phænomena after the wounding of the skull and brain, with great caution and restriction.

5.) The comparison of the skulls of animals with their powers and qualities; and also of both of these with the skulls and powers of men.

It is true this part of comparative anatomy has been much neglected, and it is difficult to determine the relative parts of each: still much may be learned by such a comparison; as for instance, we find the musical organ

very strikingly in singing birds, that of slaughter, in carnivorous animals, &c.

6. We may avail ourselves of impressions in gypsum of heads and skulls.

This is a valuable substitute for the natural skull, and when a number of them are brought together, more particularly of public characters, men eminent in the arts and sciences, the comparison of so large a number cannot but lead to important results.

7. It is useful to observe the gradations of eminence and perfection in which the distinct organs are found in the various classes of animals. Dr. Gall states the following facts as results.

a.) That the more homogeneous the mass of any organic being is, or the more an animal approximates to a plant, the greater is its power of reproduction; while this power declines, and life concentrates itself, the higher the nerves and brain advance in this development; so that in the more perfect animal, man, the power of reproduction is confined almost alone to the bones, hair, and nails. It follows from this that the brain has no share in supporting organic life.

b.) That the organs of animal life in the various kinds of animals proceed from the spinal marrow.

The

The connection of the organs of organic and animal life takes place on that spot of the *medulla oblongata* where the pyramids cross (in the neck.) Hence this spot is the most mortal in man and beasts. In most countries, huntsmen, butchers, and cooks are acquainted with this. Even the falcon is instinctively led to strike its prey on this very spot, either with its beak or claws. But still we are not to consider this point as the organ of vital power, or the vital principle, as that is merely a fiction, and no where really existing. Immediately above this spot are those organs which are of first necessity and importance in the support of existence: on the basis of the brain are the organs of the sexual passion, parental and filial affection, and the organs of sense. The more the animal advances in perfection, the more the organs ascend, as it were; so that those which are peculiar to man, lie upon the summit of the brain.

c.) That those organs whose functions are analogous, as for instance, those of the sexual passion, love of children, &c. adjoin each other.

After the preceding statement it is needless to add that Gall considers the enquiry concerning the *seat of the soul* to be idle

and absurd : but it may be right to remark that he objects to the hypothesis of *Sömmering*, that it lies in the liquor found in the fourth ventricle, for two reasons. First, that not all the nerves end in this ventricle, viz. the auditory nerve does not ; and secondly, that the existence of this liquor in the living and healthy state of the subject has not yet been proved.

It may be proper to add that experiments were made at Mayence on persons guillotined, The brain was opened immediately, and no liquor found in the ventricle ; it may therefore be an accumulation of vapour or gas taking place after the death of the subject.

CHAP. VII.

ENUMERATION OF ORGANS.



IN proceeding now to the enumeration of those organs which Dr. Gall supposes he has already discovered, the English reporter of this new German Organology does not hesitate to declare that he is well aware of the first impression which the very pretension to such a science must make on the minds of his readers in general, and that he regrets his author should have possessed so little address in his attempt to remove the obvious *a priori* objections to his doctrine. Dr. Gall once declared in the writer's presence, when he was hunting for a name for one of his organs, that he was better qualified to detect an unobserved phænomenon of nature, than to find words to state his discovery : hence he has frequently changed the names by which he

distinguishes his organs ; and doubtless, should the substance of his science be confirmed, and become current, his vocabulary will not long remain as it now stands. This vocabulary too will be more offensive to an Englishman than a German, on account of the different habits of the scientific men of the two countries, in the use of popular terms. The German philosophers are accustomed, in order to express a natural or moral principle, to borrow some familiar term, commonly applied to an ordinary fact or appearance in life or nature which is derived from such principle ; and at the same time, in their scientific use of the term, they make no reference whatever to that ordinary fact or appearance ; employing the name of the thing for the principle in which the thing originates. German students are therefore accustomed to construe such popular terms liberally and scientifically, but in England, general readers will always be liable to misconstrue such a language ; they will give a gross interpretation to positions which was never intended by the authors of them. On the other hand, were writers to avoid such popular terms, and hunt for a vocabulary in the wilds of metaphysics, they would be, it is true, not misunderstood, but still they would not be understood,

derstood, for they would not be attended to at all. I should not wish to try the virtue of most authors, by placing them between the horns of this dilemma. Gall has made his choice: without hesitation he has put his finger upon the human skull, and said: Here is the organ of cupidity, there of murder; this protuberance points out one who has an excellent verbal memory, that, denotes a person who recollects places well; at that corner lies the sign of musical sense, here that of colours, &c. &c. Such being his unqualified assertions, or rather, such being the assertions which it is easy to learn by heart and repeat, while the qualifications which the author makes are disregarded, and not repeated; no wonder that sometimes indignation, and sometimes contempt, indispose judicious persons to enquiry: and while Gall himself neglects to point out the different degrees of proof by which his distinct positions are supported, the laughers and the revilers cannot be blamed for chusing as the themes of their merriment or declamation, those assertions which appear the most extravagant and fanciful.

In the mean while, the most unfavorable remark which forces itself on the minds of even the candid and liberal, is the inadequacy of the organs to explain the various phenomena

phænomena of mind. Some are found for very insignificant and merely accidental circumstances of life and characters, while essential features have no corresponding instrument. Perhaps, however, this objection may be sufficiently invalidated by observing, that we cannot here apply the rule, "*De non apparentibus et non existentibus eadem est ratio.*" We may well conceive the existence of the organs, tho' we may not be able to point out where they appear. But I need not here anticipate the objections of the judicious readers; the less so, as at the end I have translated the impartial strictures of Huseland, a physician of distinction in Germany, and advantageously known here.

Gall arranges the organs under three distinct classes.

1. Those by which man is immediately enabled to enter into connection with the external world.

I.

The Organ of Sexual Love.

This organ constitutes the cerebellum. It comprises that part of the *os occipitis* which lies below the *linea semicircularis inferior*, towards the great occipital hole, and in living subjects

subjects therefore is to be judged of only by the thickness and breadth of the throat and neck; it appears double on the skull. Though the two organs and eminences of the cerebellum join, yet each produces a swelling apart on the skull, occasioned by the *crista occipitalis interna*, which lies between.

PROOFS AND OBSERVATIONS.

a.) It has been already observed, that as the sexual passion arises, this part of the brain (the cerebellum) grows in disproportion to the other parts (the cerebrum); and when, by castration, the purposes of nature in the formation of this organ are defeated, we find that this organ ceases to develope and perfect itself. It is observable in all who have suffered this operation when young, that the back part of the skull, as it were, ceases to grow; the neck is narrow, and the voice, whose seat is in the throat, loses its manly vigour.

b.) This remark is equally made in many species of animals. In the more simply framed animals, in certain insects which generate in the usual way, the whole mass of brain consists of mere knots, which are, as it were, the commencements of the cerebellum;

lum; while in those other animals which do not procreate in that way, these knots are wanting. The stallion and the bull have a more perfectly developed cerebellum, and consequently have a thicker neck and broader head behind, than the gelding and ox. This is known to the common people who are concerned in the breed of horses, who give the preference to those stallions whose ears stand the widest apart. The male mule, which has no power of procreation, generally speaking, has a very narrow neck, and the ears stand close together. It is further observed, that the horns of the ox are much larger than those of the bull, for the reason before stated, that the process of ossification encreases, as the brain diminishes; from the same principle are the phænomena attending the growth of the horns in the stag. If at the time of rutting, the horns are cut off, the animal loses its power of procreation, in the effort of nature to reproduce this substance. The channel in which its strength should run is turned aside, and it does not recover its generative faculty till the horns are grown again.

Throughout the whole class of quadrupeds, the neck of the male is thicker than that of the female. Gall attributes this to the longer

longer duration of the sexual appetite in the male.

c.) There are many phænomena, in cases of disease, tending to the same conclusion.

In the nymphomania Gall has found the neck very hot, swollen, and painfully inflamed. He related the case of a woman of rank and character in Vienna, subject to the most violent attacks. She was frequently seized with convulsive affections in the neck; and in a sort of madness would violently knock the back of her head against her back and shoulders till she obtained relief by means of a seminal discharge.

Wounds in the neck and back of the head will produce inflammation of the parts of generation and even impotence.

In nervous fevers, *satyriasis* is not merely a local disease, but a general evil of the whole nervous system; and to be removed only by some general remedy applied to the nerves. This seems to intimate the participation of the brain in generation.

The cases of *hydrops cerebri* are also in favor of the same doctrine: It is found that of all general functions of the brain, that of generation is often the only one which remains undisturbed; and for a very natural cause,
that

that the cerebellum suffers least of all parts of the brain.

Craivs are notorious for their lasciviousness, while they are without the common intellectual powers, and their cerebellum is unusually large. The known effects of sleeping on the back, Gall also attributes to the pressure and warming of the cerebellum.

Among other cases of insanity, G. related one of a man, from whom the fixed idea could not be removed that he had six wives, &c. The cerebellum was found monstrously large after his death. Once, on entering an hospital, in which he never was before, he heard a mad woman uttering the grossest obscenities, he desired the attendants to go and examine her head, declaring that if they did not find the skull remarkably large behind, he would renounce all his opinions. He was not deceived.

The bust of Raphael which was made from an impression taken in Gypsum, exhibits a sort of bag behind, announcing that tendency of his constitution to which he unhappily fell an early victim.

II.

The Organ of parental and filial love and the animal storge.

According to the observation that kindred functions are seated in adjacent organs, this organ is found in that part of the os occipitis which is included between the two *margines lambdoideæ* ——— and the *protuberantia occipitalis externa*. It appears simple on the skull, because the two organs adjoin.

G. very early remarked on this part of the skull, not only in women but in the female of many animals, a very striking protuberance or swelling, which is never found in the same degree in male animals: In the female ape too, and in children, this conformation is also remarkable. Having then no correct notions concerning the nature of an organ, Gall conjectured this part of the brain to be the seat of some sort of sensibility which may be more peculiarly the attribute of the female; but afterwards, considering sensibility as a quality common to all organs, he was led to attribute to this conformation, a characteristic feature of the female sex, the love of their children, also that strong animal storge which

is found so frequently in the brute creation.

The following are the results which G. professes to have drawn from many years continued observation :—

a.) That in general the skulls of the female and male, in the human race as well as in many animals, may be distinguished from each other by the outline formed by the occiput, taking the profile of the face. The female head behind will form a curve, in which the projection is above, while the male head projects below ; conformably, says G. with our observation, that that sense or impulse of which are now speaking, prevails in the female, while that which was the subject of the last article, is more strong in the male. The contrary opinion which is maintained by many, as far as respects mankind, G. attributes to our not enough considering the effects of early impurity in boys, in weakening their passions; and the more careful education of girls, which leaves women the full possession of those sensibilities which are and ought to be attendant on healthy maturity of years.

b.) Further, this observation is found to conform with the facts known of the life and habits of the different kinds of animals. The
various

various form of the os occipitis is found particularly striking in those animals, the male of which do not care for their offspring, as the dog, the cock, &c. while, on the contrary, where the male shares in the solicitude for its young, it also has the organ. In like manner, this organ is wanting in those animals which desert their young; as the cuckoo, which leaves its eggs in the nests of other birds; the crocodile, which buries them in the sand.

c.) In children this organ is also found, and always in some proportion to the affection they early evince for their parents, nurses, &c. But as they advance in life, the form of the skull changes. In boys, that part of the skull retreats, which is the seat of this organ, while the parts below become more prominent; on the contrary, this same part of the skull swells and encreases regularly in girls.

c.) Further: Gall has been led to assert the influence of this organ, by various observations in the course of his practice. Among other facts, he related one, as an instance of a most unnatural impulse in the mind, which is better explained by supposing a physical necessity, resulting from the organisation, than by any moral explanation. Catharine Ziegler was tried at Vienna for the murder of

H

her

her bastard child: she confessed the act and said she could not possibly help it; she was forced to do it, she could not any how resist the desire she felt to commit the murder. The frankness of this her confession, connected with favourable circumstances, her good character, &c. induced the tribunal to pass a merciful sentence; and, under pretence of insanity, (which she did not herself plead,) she was acquitted, and at length let out of prison. But she told the court, that if they let her escape, they would be responsible for the next murder she committed, for that if she ever had a child again she should certainly kill it. And so she did in fact. About ten months after her delivery from prison, she was delivered of a child, which she soon murdered. Brought again to her trial, she repeated her old story, and added, that she became pregnant merely for the sake of having a child to kill. It does not appear whether she was brought before the same Judges as before, most likely not; she was executed for this second murder.

From the MSS. notes whence this account is partly taken, I do not find that this skull came under G.'s observation; but one of the printed statements of G.'s Theory, going thus far, *models that G. found the organs of natural affection as it were cut off*, but that book is too incorrect to be relied upon.

At Spandau G. examined the skull of a woman in confinement on suspicion of having seven times successively murdered her new born infant, but the fact could never be proved against her. In her he found the organ wanting. While, in a woman in labour who suffered under a delirium, and could not be persuaded that she was not pregnant with six children, he found this organ unusually large. The skull was produced, and it actually had the conformation pointed out. G. hence considers the want of this organ as the result of some disease in the brain, preventing its developement in this part.

Various objections have been made to the supposition of such an organ.

1. That it is too closely connected with the organ of sexual passion, to be distinguished from it : but G. replies, that these passions do not accompany each other, on the contrary, more frequently are found together, in an inverse ratio. It is one of the most interesting of Gall's observations (if in fact it be correct) that women, notorious for their licentious habits, are generally bad mothers, and indifferent to their offspring : and in like manner, that affectionate and tender parents are generally known to be at the same time among the chastest of wives. Those animals,

G. adds, are the most lascivious, which are most neglectful of their young.

2. That this love of the offspring does not show itself till the offspring exists, but the organ has subsisted long before : G. answers this objection by a remark of great importance in the general theory : that an organ may long remain in an inactive state, and that its presence shows the *possibility*, not the *reality* of any passion. Thus, in many animals, the sexual organs are periodically stimulated, as is the uterus of females, which produces thier periodical purification. In like manner, this organ may be first stimulated and called into action by pregnancy. That an organ may be stimulated to greater activity is instanced in mules, which may be rendered prolific in a warm climate by very nourishing food. The same answer may be applied to those who would bring forward the life of *actual* abstinence and celibacy led by so many of both sexes, in whom the same organs are to be found.

3. It has been said that cats, and other animals which manifest this storge, want the posterior lobes of the cerebrum, which is the seat of this organ ; but this is a mistake, the lobes are actually in the brain though placed otherwise.

III.

The Organ of Friendship or Fidelity.

This organ lies on both sides of the skull, adjoining, and just above the preceding organ, towards the ear, immediately over the *sutura lambdoidea*, and above and about the middle of the *margo lambdoideus*, on the *parietalia*; and is the second organ which appears double on the skull, as the similar organs do not immediately adjoin.

The proof in support of this organ, and of the precise boundary of it, is not like that brought forward in respect to the preceding organs. G. speaks concerning it with unusual hesitation and diffidence. The evidence adduced is certainly not of a kind to justify our affirming its existence, though it may furnish a motive to anatomists, and persons who have a love of scientific observation, to direct their attention to the suggestion of the author*.

* To avoid the necessity of ever repeating the same remark, the compiler of these sheets wishes it to be understood, that what Gall confesses with respect to the present organ, he himself is disposed to extend to many of the organs hereafter to be enumerated, and most pointedly to those which concern the higher attributes and more delicate distinctions in mind; as wit, metaphysical acuteness, &c.

There are two distinct observations which have led to the supposition of this organ.

First, this organ is found in a great degree in certain species of dogs, whose fidelity and constancy are characteristic; in the terrier, the spaniel, the lap dog, &c. but not in the butcher's dog, the greyhound, and the mastiff.

G. has also observed this organ in a high degree in several persons, in other respects totally different, and agreeing only in this one quality. In the poet Alvinger; in a notorious highwayman at Vienna, distinguished equally as a robber and a friend, and who chose to die rather than betray his confederates, &c.

IV.

The Organ of Fighting.

This organ lies on both sides of the skull near the organ of friendship, but somewhat lower, or behind, and a little above the ear. It embraces therefore the *angulus mastoideus* of the *parietalia*.

Gall was long in the habit of collecting around him the boys playing in the streets of Vienna, and making them, by petty bribes, confess

confess their own faults and betray those of their fellows. He then used to class his subjects together, the fighting, lazy, and roguish boys apart; and it was thus that he was led to assign an organ to an impulse whose reality will be readily acknowledged; tho' its description may not be easy. G. first called this the organ of courage; but it intimates, in fact, merely that sort of bodily courage, that disregard and inattention to bodily pain and danger, which distinguishes the boxer, and which disposes a man to be a soldier. Gall's profession allowing him to go on in his examination among the lower classes of society, he declares, that his speculation has been confirmed by several hundreds of instances, in which the character of the individual was as certain, as the organ was clearly ascertained. He then reversed the order of his enquiry, and examined the skulls of persons equally known for their want of courage, in whom he found the organ also to be wanting.

G. exhibited the skulls of the same poet *Alxinger* and of the Austrian General *Wurmser*. The skull of the one was on this part quite flat, while a very marked swelling distinguished that of the General. It is needless

to add, that G. selected these specimens from the known character of the subjects.

Further, G. asserts that a comparison with various animals confirms his opinion. This organ makes, he says, the skull broad behind; it is a criterion of the spirit and courage of horses, dogs, &c. The bull-dog has a very broad head, the mastiff, on the contrary, not so much, also the little pug dog has this breadth behind. The hyæna is very broad between the ears, the hare very narrow. In birds also the organ is found; in the robin red breast and the Guinea hen. It is said that the Caribs try to flatten the head. G. suggests that if this habit be really existing, it may have arisen from their having observed that their bravest warriors have a peculiarly broad skull behind; and wishing that their children may be like them, they try this experiment.

V.

The Organ of Slaughter.

Dr. Gall was led to the detection of this organ by observing the different structure of the head in carnivorous and granivorous animals. Draw a perpendicular line behind the
meatus

meatus auditorius and you will find, that in granivorous animals, the whole of the brain, except that part of it which constitutes the organs of sexual love and the storge, falls before this line ; and that on the contrary, in carnivorous animals, a great portion of the mass of the brain will be found behind this line. In men and in monkies the *meatus auditorius* falls in the middle of the mass.

After making this observation, it was agreeable to the maxims of Dr. Gall's theory to infer, that that portion of the brain which is possessed by that class of animals, is the seat of the organ which gives the impulse whence the class is formed and named. In animals, at least, that thirst of blood which leads to slaughter, must have a physical cause, an organ or instrument through which it acts ; and if it be in the oeconomy of nature to furnish man with the various propensities of the animal world, at the same time that he is endowed with higher impulses which enable him by the act of his will to modify and govern those propensities ; there will not be any thing to the considerate student of nature, more offensive in the supposition of this organ, than in that of any other. Thus much is said by way of anticipating the probable

bable objection *a priori* to the notion of an organ of slaughter or blood.

This organ lies before and above the preceding organ of fighting, or above and somewhat behind the *meatus auditorius*, falling behind the line before mentioned; it appears double on the skull. It occupies that part of the parietal bone which lies immediately on and over the *margo temporalis*, and that district where this part of the parietal bone is united with the *pars squamosa* of the *os temporum*.

That man is an eater both of flesh and vegetables is known, and the position of his brain suits the rule laid down; the observation of a number of striking coincidences may justify the assuming a connection between the natural food taken by animals, and certain tendencies of character in men; and their being seated in one and the same organ.

It is notorious that individuals occasionally manifest a great delight in causing and in witnessing the violent death both of animals and men, which seems to suggest the existence of a *physical* impulse. Dr. Gall related a number of anecdotes (and every country has its own) of very strange propensities to
blood,

blood, which being unchecked by moral motives, may well lead to acts of cruelty and at length to murder. Connecting this fact with the observations just mentioned, and which the study of comparative anatomy had suggested to him, he proceeded to examine the skulls of persons who had betrayed those dispositions. From the Elector of Wirtemberg he obtained the skull of a murderer, in whom he found his expectation realised ; and when at last the band of robbers and murderers who so long infested the left banks of the Rhine under *Schinderhanns*, were caught, and a number of them were executed ; he found in the strikingly marked developement of this organ in these banditti, a confirmation of his conjecture which was satisfactory to him.

G. has further observed, that in those subjects, in whom this organ is prominent, the organ of good-nature is generally found very weak. Where the organ of slaughter is fully developed, and left as it were unbalanced by other organs, it may at length produce an impulse so strong as to be beyond the influence of voluntary power. Hence, that blind rage of murder and destruction, which general history, as well as the annals of criminal courts, have made known to us, and which

which seems to be, in the wretched subjects of it, no less a diseased and insane impulse, than others less fatal to the peace of society.

VI.

The Organ of Address.

This organ lies before and above the organ of slaughter, about three fingers broad, just over the *meatus auditorius*, on the front lower angle (*angulus sphenoidalis*) of the parietalia, and appears also double on the skull.

It is found particularly in animals remarkable for their cunning and address in seizing their prey, in stealing, &c. particularly in the martin, tiger, panther, fox, cat, greyhound, and in some kinds of birds, &c. In men it is found in persons of very different characters, tho' each of them have that whence the organ is here named. Gall's German word *schlauheit* generally means cunning; and he asserts its frequency in persons of a low, mean, tricking turn of mind, in priests who ingratiate themselves with the wealthy, in upstarts who have risen by their *savoir faire*. But not only these persons are marked by this organ: it is com-
mon

mon to great politicians. Frederic the Second had it in an eminent degree. It is common to great actors, and seems to produce one of the great requisites for the stage. G. found it in the greatest actor and actress of Berlin, Iffland and Madame Unzelmann.—
Jam satis !

VII.

The Organ of Cupidity.

Such is the name which G. has very recently given to an organ, which he formerly made known under the more offensive term *thrift*. And this change of denomination is a specimen of that kind of improvement which must be made in the terminology of Gall's theory, should the general facts be ultimately acknowledged and wrought into a system.

This is the organ of address continued almost to the eyes, and is like that organ double. It occupies that part of the *os frontis* which is found by the *linea semicircularis* towards the coronal suture.

If the organs of address and cupidity be both at the same time strongly developed,
the

the head has a broad and at the top a flattened appearance.

The cupidity which is the result of the organ under observation, is, more particularly explained, the impulse privately and secretly to take away, and is occasionally found connected with no desire whatever to retain what has been so taken. Our books on psychology contain very curious cases of this propensity to steal, even in persons of rank and fortune, and the same thing is observed in animals. The jack-daw will not touch what you throw him, but he will steal the same thing and hide it carefully, and then bring it again; it is the same thing with the raven, cat, monkey, &c. Here this impulse seems to arise from the pleasure felt in the exercise of address or cunning. This same passion was felt by Victor, the first King of Sardinia. Gall stated a variety of singular cases which may perhaps be matched by tales every where. He spoke of ladies who *longed* to steal, and whose desire it was absolutely necessary to gratify; and of an impulse to steal arising after a person had been trepanned; cases which seem to imply that some organ has been excited by disease or accident. The Kalmucks, he says, are in general thieves. A young Kalmuck who
was

was brought to St. Petersburg, and employed as attendant at the altar, and who had been impressed with religious fears, if not with religious principles; grew melancholy and languished with the *maladie du pays* (home-sickness.) He avowed to his confessor, that he longed to steal, and that his religion would not suffer him. The priest, finding that he could not cure him of his desire, and that the boy was actually pining away, at length gave him a permission to steal, upon condition, that within a given number of hours he should return the articles. In the evening the boy came back full of joy and gratitude, and brought the confessor his watch; which he had stolen from him while he was elevating the host.

Gall asserts, that during his long experience, and that minute examination which he has made in prisons, houses of correction, &c. he has always found this organ marking determined and incorrigible thieves. The organ, he observes, he has found more strikingly marked in the thieves of protestant countries, than in those among the Catholics, because there are among the one people fewer moral restraints from religion, &c. than the other; so that the prevalence of the vice requires a stronger natural impulse among Protestants
, than

than among Catholics. But it does not follow that the converse of the proposition is equally true, that wherever the organ is found in an eminent degree, there the habit and characters of stealing must also be found. It is only in extreme cases that the physical tendency is to be considered as too strong to be subdued by moral restraints. Only when it allies itself to cases of acknowledged partial insanity.

It has been objected, that the idea of property is purely artificial; and that therefore no act which respects it, can have a natural origin. But G. contends that a vague sense of property at least is natural, on which the more complicated notion is engrafted, and cites well known facts of natural history, to prove that it is common to the brute creation. Birds of passage, as well as those which have for a time been confined in a cage, return to their old nests; and the Shamois will fight for its post on the mountain, which it keeps during the whole summer.

VIII.

The Organ of Good-nature.

This organ lies in the centre of the upper part of the forehead, between and above the
tubera

tubera frontalia. It lies in the middle of the forehead, and though composed of two distinct organs, yet they, meeting, appear but as one.

The existence of this organ receives its strong confirmation from its undoubted reality in many quadrupeds. This first led G. to seek, and at last find it in the human race. G. asserts, that there is a sure criterion of the temper of horses and cows, &c. in the form of their forehead. Wherever a broad protuberance is found in the middle, about the breadth of three fingers above the eyes, they will also be found gentle and good natured; when, on the contrary, the forehead is marked by a sinking in, or depression, they are assuredly malicious, and must not be trusted. Many jockies and horse-dealers, says G. and particularly the French, have long known this; and it forms one of the circumstances to which they are particularly attentive. Other animals of the stag kind, on comparison, afford the same observation. The Austrian horses in general have this organ, and have also the character assigned to it. In the doe and the shamois this organ is not to be found, and the shyness of this latter animal is well known. Birds of prey, the vulture, the eagle, &c. have a sort of furrow, as if hollowed out,

in this part. It is the same with beasts of prey, the hyena, crocodile, &c. This fact being established in the brute creation, the rule of analogy which G. so readily follows led him *a priori* to determine, it must be verified also in man. And he asserts his expectations have been realised. The better busts of Nero; the impressions taken in gypsum of Robespierre's head; the general form of the forehead, and the character of the Caribs, (whether we attribute or not any thing to the boards with which they are said to flatten the forehead is here immaterial;) and a great number of particular observations, which of course are arguments only to the observer, and merely motives of examination to others; all concur to make Dr. G. assign to the brain in this district an important function.

IX.

*The Organ of Mimickry or Imitation. **

This is one of those organs concerning which, the reporter of G.'s doctrine feels himself

* The German word is *darstellung*, a term of frequent use in the theory of the fine arts, and a constant torment to the English reader from the want of an adequate word in his own

self embarrassed from the paucity of materials ; to say nothing of the want of proof, the seat of the imagined organ itself is but vaguely given. G. confessed he could persuade no one of the reality of it, of which however he was, from repeated observation, himself convinced.

This organ is to be inferred from a ball-like swelling of the uppermost part of the forehead, on each side of the centrally situated organs of *Good-nature* and *Theosophy* (to be hereafter described.) Where this organ and also those of good nature and theosophy are also developed, they would, together, form one beautiful swelling or vault of the fore part of the crown of the head.

The persons in whom G. says he has strikingly observed this organ, are not merely great actors professionally, but also mimicks in private and low life, people, in whom mimicry has been a passion. Whether or not it is to be ascribed to monkies he seems to doubt.

own language. It seems to correspond with *μίμησις*, though not with our *imitation*, which renders the Greek imperfectly. *Darstellung* is used for the vivid and exact *description* or *representation* which the poet makes of nature and life.

X.

The Organ of Vain-glory or Vanity,

Lies on the parietal bone backwards. It appears double on each side of the organ of *Loftiness*, (hereafter to be described) with which it is so nearly allied, that G. seems to have subjected himself imprudently to unnecessary objections and reproaches, by asserting a distinction so little capable of being made even plausible. He is able to assert in support of it, nothing but certain observations which he says have been made not only in common life, but also in mad-houses, where he has at once by this sign discovered those who evinced a vain madness, thinking themselves kings, queens, &c. It appears double, from the intervention of the organ of loftiness. Persons having this organ have often the habit, so characteristic of an haughty man, of carrying their head aloft, inclined rather backwards. The Germans say of a proud man, "He carries his nose high."

XI.

The Organ of Constancy or Firmness,

Lies also in the middle of the skull, behind the organ of theosophy, and before that of loftiness,

loftiness, in that part where the *anguli frontales ossium bregmatis* meet. The adjacency of this organ to that of theosophy, according to Gall's peculiar train of thought, serves to account, as well as moral causes, for that spirit of firmness and endurance which distinguishes the heroes of religion so much more than those of philosophy. That this organ, put into action beyond its due proportion, may produce the diseases of incurable obstinacy, &c. follows from all that has been said; hence pathological phænomena, as well as that firmness and constancy which G. asserts he has found in conjunction with this organ, which might therefore be stiled the organ of *character*.

II. We proceed to the organs (according to Gall's not very correct or significant classification,) by which we are enabled to acquire a more familiar acquaintance with objects which are known to us by means of the external senses.

Before Gall had arrived at the conclusion, that memory is a quality common to all powers, he considered the organs which are now to be enumerated, as so many various organs of memory, as it is by means of these organs that man is enabled to arrange and fix the

impressions of the external world in various relations. But now he prefers representing them as organs of a particular *sense*, which sense, when it rises to a certain degree of force and vividness, may become active and productive. The organs therefore that immediately follow are termed in German, Organ of the Sense of things, Sense of place, Sense of person, &c. a phraseology which deviates too much from our ordinary language to be adopted here.

XII.

Organ of Aptness to learn and retain Things,

This organ lies immediately over the root of the nose, betwixt the two eye-brows, upon and above the *glabella assis frontis*, and appears simple on the skull, because the organs meet in the centre and coalesce into one. In the earlier classification which Gall employed, he termed this organ that of the *memory of things*, as opposed to words; the import of which appellation will be at once intelligible to those who recollect in what sense the philologists distinguish between a *Lexicon verbale* and a *Lexicon reale*.

Gall has collected various observations concerning

cerning the formation of the forehead on the part pointed out, both in quadrupeds and men. First, he has found that those animals which are, to a certain degree, susceptible of education by man, are marked by a protuberance of the lower part of the forehead, nearly in the proportion of their capacity of being taught; and he illustrated this by the production of various skulls exhibiting this gradation; in the water otter, the fox, the greyhound, the spaniel, &c. In the elephant, the forehead is much raised; still more in the ourang outang, but most of all in man. Further, G. has minutely compared the skulls of wild and tame animals of the same kind; and uniformly found that the tame, or tameable species, are marked with this organ, above the wild species. This he has particularly noticed in the wild and tame duck and goose, the tame hog, the wild boar, &c. &c. This observation induced G. for a time to call this organ—the *abrichtung* organ; a word which is not in our language, used to express the training of animals, an art which G. thinks will never make any great or material progress, nature having fixed its limits. In men, Gall has observed this organ, particularly among that class of persons who are commonly called *matter-of-fact* people, men

of information and business. It denotes the facility of receiving and retaining the impressions of outward things.

XIII.

Organ of Aptness to learn and retain Places.

This organ lies on each side of the organ last mentioned, and hence appears double on the skull. It fills that half of each of the eye-brows which is next the nose (*arcus superciliaris*.)

The function which this organ is destined to fill in the inferior animals, is, that it gives the power of seeking out distant places, and of finding them again, when long deserted and left, at a great distance. Birds of passage, such as swallows, storks, &c. &c. are all marked by this organ; and it is known of such birds that they have a perfect recollection of their ancient places of residence. Swallows will return, year after year, to the same nest. Pigeons, which are used as letter-carriers, have also this organ. The capacity which animals, dogs for instance, have, of following their masters, as well as of returning to their home, has generally been attributed, and often truly, to the acuteness of their scent; but
many

many facts are known which do not allow of this explanation. Gall related a tale of a dog taken to England from Vienna, which soon escaped from its new owner, went alone to the port, contrived to get on board a ship, and accompanied a gentleman to Mayence, whom he there deserted, and then took his course alone to Vienna. Another well authenticated anecdote was related by G. of a dog which, in like manner, escaped from Petersburg to Vienna. Whence can this uniform and otherwise inexplicable instinct arise, in certain species of animals? and why should not this instinct be attached to a peculiar structure of the nerves and brain?

In men, this organ seems to operate variously, but in every case it is connected with a disposition to observe the relations of space, and produces a delight and a peculiar ability in those occupations which depend upon such relations. For instance, both Marshal *Laudon* and General *Mack*, are distinguished by this organ; and these Generals are both said to possess, in an eminent degree, that important part of the duty of a Commander in Chief, which lies in a skilful disposition of troops in the field; what may be called the geometry of war.

It generates the love of travelling. After G.
had

had formed his opinion concerning this organ, he was struck by meeting a woman of low rank in the streets of Vienna, on whose forehead the organ was so strikingly marked, that he took an impression of her head for his cabinet. On enquiring of her concerning her life, he found she was possessed by a very mania for wandering. At sixteen she ran away from Munich to Vienna, where she lived, not as a servant at one place, for she could not possibly stay long in any family, but went from inn to inn, where her restless love of change was best gratified. She, as well as all persons thus organised, had a surprising skill in finding her way in strange places. We all know how very different this ability is, in different persons, and that it stands in no general relation to the intellect in general. The portraits and busts of most eminent travellers and navigators, are marked by this organ. If I mistake not, the biographer of Captain Cook mentions his countenance being distinguished by over hanging eye-brows.

After an illness, the aptness, or sense which this organ is supposed to create, has been lost. G. knew a bookseller's man, who had a nervous fever, and, on his recovery, found that he had lost all recollection, and could not again learn to remember how and where the
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the books in the shop were placed, with which he had been before so well acquainted,

XIV.

Organ of Aptness to recollect Persons.

Of this organ, one of the most insignificant in its function, as well as in the observations by which its reality is supported, Gall himself spoke only with hesitation. It is observed, that many persons possess, in a very striking degree, the power of recognising individuals after a long separation, and with little previous knowledge. This power, or sense, as Gall terms it, is certainly essential to social life, and may, therefore, he contends, be with propriety supposed to be the object of a peculiar provision by nature. The organ lies in the brain near the *ethnoides*, and causes a protuberance of the skull in the orbits of the eyes, under the *foramen supra orbitalis* towards the nose, and above the *os unguis* (or *lachrymale*.) Where this organ is strongly developed, the eyes are in consequence pressed downwards, and have somewhat of an oblique direction towards the nose; but where the adjacent organs are also strongly developed, this direction may not take place. All that G. is
able

able to advance in support of his supposition, is the relation of some singular phenomena of very young children, and of aged people, famous for a strong personal memory, with this peculiar direction of the orbit of the eye. But when unsupported by corroborating arguments, such facts cannot be supposed to influence the opinions of those who have not themselves witnessed them.

XV.

Organ of the Sense of Colour.

This is the first of the enumerated organs which seems to be wanting to the brute creation. The fear which horses and turkey-cocks have of a burning red colour, is an extreme case, in which even the coarse nerves of these animals are affected. In like manner it is sometimes found that individuals, and even whole families (G. knows two such) who have no such sense. The organ lies on the outside of the organ of place, and appears therefore double. When it is found in an eminent degree, it raises the eye-brow into a pleasing arch, and gives a very agreeable, free, and open expression to the forehead; and this, says G. is the characteristic physiognomy

ognomy of painters. G. asserts, he has remarked this organ in all who have a fine sense and who possess a skill and delicate management of colour, as artists. It is found also in those who are fond of gay and gaudy colours, and oftener in men than women, and is characteristic of the Chinese countenance. It is in general found more among Asiatics than Europeans, and is seen but little in Englishmen.

XVI.

Organ of Aptness to learn' and retain Music.

This is the organ concerning which the disciples of G. venture most frequently to speak, and occasionally play the prophet. It is one about which G. speaks with great confidence, and for which he seems to have gained most credit. It lies above the exterior angle of the eye, and occupies that part of the forehead which is circumscribed within the front half of the *linea semicircularis ossis frontis*, the back half of which corresponds with the organ of cupidity. When this organ is strongly developed, that part of the skull is necessarily enlarged. It is extended either in breadth, (G. cited the Italian *Viotti* as an instance) or the forehead becomes high, as
was

was the case in the Emperor Joseph. In Mozart (whom the Germans please to call the Shakespear of his art) the organ had extended itself in the breadth of the forehead. In other eminent musicians it appears like a large round swelling. But in every man of musical skill or natural uncultivated talents, G. and his experienced followers declare they can discover the organ, and do not hesitate to determine *à priori* the want or the possession of the musical sense even of entire strangers. The existence of this organ receives strong confirmation from the structure of the skulls of birds. Singing birds may all be distinguished by the form of the forehead. Every one of them has the conformation pointed out, which is as certainly not to be found in those species which do not sing, as the parrot, raven, jackdaw, peacock, &c. In singing birds, the existence of this organ has the effect of flattening, within, the orbits of the eyes; while the monkey, which has no sense of musick, has an oval-shaped orbit. In those animals, which like the monkey are absolutely without this organ, both the outward *lamina* of the orbit of the eye (inasmuch as it is formed by the *os frontis*) and the upper lamina, are not touched by the brain; and in man that part of the *os frontis* which forms the

the

the forehead, lies closely upon that part of the same frontal bone which forms the orbit of the eye; while on the contrary in those men and animals which have this organ, it is only the outward lamina of the orbits (inasmuch as they are formed by the *os frontis*) which is not touched by the brain, and the *pars frontalis ossis frontis* does not lie upon the *pars orbitalis*. That the sense of musick does not depend upon the construction of the ear, may be fairly inferred from its total independence of the sense of hearing. It not unfrequently happens, that persons whose power of hearing is faint still possess a very delicate sense of musick. In the *acta naturæ curiosum* is related the history of a boy who in a frenzy, during violent epileptic convulsions, sung several popular songs with great precision. How far this sense stands in connection with that of tact and rhythmus, is a point concerning which Gall has not yet been able to form a decided opinion.

XVII.

Organ of aptness to learn and retain Numbers.

This organ occupies the extreme corners of the front lobe of the cerebrum, and is
marked

marked on the skull beneath the organ of music, at the extreme end of the arch of the eye brow, and at the exterior upper angle of the orbit of the eye; or on that part of the skull which envelopes, above and behind, the *apophysis jugalis seu malaris ossis frontis*, and in the *fossa glandulæ lacrymalis ossis frontis*.

Gall was first led to conjecture the existence of this organ, from his observing a boy of thirteen years remarkable for his talent in calculation, who would, on hearing three distinct series of eleven figures once mentioned, retain them immediately, and perform with them all the operations of arithmetic. This observation was confirmed by others, and so often repeated till it produced that conviction, which perhaps no one will feel who does not himself make similar remarks. Among insane persons, G. met with one man strongly marked with this organ, whose sole occupation consisted in enumerating from 1 to 99, and then beginning again. On a bust of *Newton* which G. produced, he professes to find this organ, and he says it is also to be perceived in those of *Kästner*, *Euler*, *Baden*, &c. He related two cases of persons who when their business call for a long and continued calculation, complained of pain on the spot where the organ lies,

lies. Animals are deficient in this organ, and negroes have it very seldom.

XVIII.

Organ of Aptness to learn and retain Words.

This organ lies at the back of the lower part of the two front lobes of the brain, and presses upon the basis of the orbit of the eye at the back part of the upper lamella, which is formed by the frontal bone. In living subjects it can be detected, but only when the organ is very much developed, by what is commonly called a goggle eye, the eye being projected forwards.

By what G. terms the *sense of words*, he denotes the faculty of recollecting single words independently of their connection and sense, which is totally distinct from the sense of language.

G. cited as persons possessing this organ in a high degree, several celebrated dramatic performers, but I find no general observation supporting his conjecture.

XIX.

Organ of Aptness to learn and retain Languages.

This organ lies in front of the lower part of the two front lobes of the brain, and presses the skull in the orbit of the eye upon the os frontis on the upper and front lamella of the orbit, between the organs of number and person; it presses the eye downwards, when developed to a high degree, so that the eye seems to be rather hanging than prominent.

This organ might be said to denote the philological talent, as it does not give the mere ability of learning words as a mere nomenclature, but the higher talent of seizing the spirit and genius of general and of particular languages. Animals (even the monkey) are without this organ.

In a digression concerning difficulties of speaking which are so often experienced by children, Gall expressed the opinion that the source of the evil lies not in a defect of the organs of speech, as is commonly conceived, but in an imperfect developement in the organ in the brain, now under consideration. G. stated a number of professional cases, shewing that

that persons might speak without a palate, and even without a tongue, and cited *Lobstein's* dissertation entitled *Feminæ elinguis Historia*. He took occasion to examine the skulls of maniacs and others who had lost the faculty of speech, and found in a section, that the laminæ of the orbits were higher arched at the ordinary seat of this organ, which is to be explained agreeably to the law before stated, that the laminæ of the skull are formed by the activity of the brain, and follow it when it retreats. The total want of this organ produces idiocy.

XX.

Organ of Mechanic Art.

This organ is found on the skull upon the temples, behind the organ of number, and below the point where the organs of music and cupidity meet; or on the *os frontis* immediately behind the *apophysis jugalis* of the same, and above the place where it joins with the *ala magna ossis sphenoidei*.

By mechanic art G. here understands the genius of invention, as applied to external form. In unison with other organs, it forms

the artist, in the most honourable sense of that term, as applied to the fine arts. This organ is found on the beaver, the marmot, and field mouse, animals which possess a great portion of that instinctive skill which has so often been confounded with reason, and which certain metaphysicians still consider as such. The bust of Raphael was shewn to G.; he judged it to be that of a great mechanic. Persons ingenious in the little contrivances of life are found possessed of this organ. It often happens that the forehead of persons marked with this organ has a certain square appearance, which Gall first considered as the characteristic of this class of persons.

XXI.

Organ of Prudence or Circumspection.

This organ is found about the middle of the parietalia, yet somewhat nearer the temples, behind and above the organs of cunning and words, hence near the *Linea semicircularis ossis bregmatis*, and above the same; it of course appears double.

Gall speaks of this organ with great confidence; his observations, he says, are too numerous

numerous and uniform not to have their source in nature. This organ is found in all those animals in whom caution is a characteristic. The doe has it very strongly marked, still more, the shamois. It is also common to those animals which seek their prey by night, in a greater degree than to those animals which seek their prey by day. The owl has this organ more strongly marked than the eagle. We ought not, says G., to ascribe the nocturnal excursions of this animal to the structure of its eyes, for by the power of enlarging or diminishing the pupil at pleasure, it can accommodate itself to every degree of light. The water otter has this organ to a greater degree than the fox, with which it in other respects agrees. It is also found in the mole, the marten, &c. In men it denotes often a very scrupulous and timid character, when found in a greater degree; while in persons of a thoughtless and dissipated turn of mind, the want of this organ may be observed. Gall has examined, for this purpose, many beggars, and found this organ only in two subjects, while he has uniformly met with it in prudent and cautious persons. He has also met with it in madmen, who suffer from absurd and groundless fears and apprehensions. G. (in spite of its apparent inconsistency) observes

that this organ is found more strongly in children than in grown persons, and imputes to it their frequent hair breadth escape from imminent dangers.

XXII.

Organ of Loftiness.

This organ lies immediately behind the crown of the head, between the two organs of vanity or vain glory before enumerated ; on the skull, therefore, it occupies the centre of the *sutura sagittalis*, and the adjoining part of the parietalia. It appears simple upon the skull, since it lies on the centre, where it forms a kind of swelling.

The English term loftiness has been chosen as expressing in part the double function which this organ seems to fulfil ; though those functions have at most only a kind of figurative resemblance. Gall first called it the organ of haughtiness, and then adopted that of "sense of height" on account of a secondary quality he supposes he has detected in the subjects on whom this organ is found ; that is, he has found this organ to be peculiarly developed in those animals which are fond of high

high places; in eagles and other birds which seek eminences.

In men, this organ seems rather to denote the tendency to haughtiness, though it is probable that both these sensations may in fact be connected. One of the most striking coincidences of the supposed organ with the character, G. found in a beggar, in whom he remarked it in a very great degree. On enquiry concerning the history of this man, he was informed that this man was a beggar through pride; this feeling had taken possession of his mind so powerfully as to produce a conduct that fell little short of madness. When young he refused to learn any trade, because he thought work degrading to him; and when sunk to the wretched state of a common beggar, he could not avoid occasionally manifesting the strong tendency of his mind, often ridiculously.

In mad houses G. has met with frequent confirmations of the reality of this organ. He has remarked its prevalence on those who in their insanity deemed themselves kings and queens; he has observed it in children, accompanied by the disposition to play the king and the general, and take the lead over their play-fellows.

III. We now proceed to the last class of organs, those which constitute the peculiar prerogatives and glory of the human race, and which more eminently raise him above the brute creation. But here the great argument in favour of Dr. Gall's theory, derived from analogy and comparative anatomy, altogether fails. When we consider, besides, that the organs still remaining are crowded into a narrow compass, comprising only that portion of brain on the crown of the head which the inferior animals have not, and that therefore the difficulty of ascertaining the seat of the organs is here greatly increased. Considering further, that the powers and dispositions of mind here distinguished, are not only the most important, but also the most recondite, concerning the identity or diversity of which metaphysicians and psychologists are in great doubt. The reporter of G.'s doctrine cannot help expressing his regret here that he should be able to find so little argument and evidence in support of the fanciful suggestions of his author. But the subsequent organs may therefore be dismissed with greater brevity.

These organs all lie on the crown of the head, or on the forehead, that august feature
which

which the poet considers as the glorious characteristic of humanity.

Pronaque cum spectent animalia cætera terram;
Os homini sublime dedit: cælumque tueri
Jussit, et erectos ad sidera tollere vultus*.

The forehead rises in animals as they are advanced in the scale of intellect, but it is in man alone that the front assumes that graceful swell which is no less beautiful to the eye of taste than significant to the physiognomist.

XXIII.

The Organ of Rhetorical Acuteness.

This organ lies on the middle of the forehead, above the organ of things, or of education, and beneath that of good nature. These three organs follow, therefore, in a strait line drawn from the *glabella* to the sagittal suture. It appears, therefore, simple on the forehead.

The function or talent which G. supposes to be connected with this organ, which G. himself terms the organ of comparing acuteness, is principally that of popular speakers.

* Ovid Metamorph. l. 1. v. 84.

G. has found this organ, generally, in priests famous for their pulpit eloquence, and in men gifted with the talent of quickly combining their ideas, and of supporting them by illustrations, allusions, parables, similies, &c. ; in short the talent of ready recollection and lively combination,

XXIV.

The Organ of Metaphysical Subtlety.

This organ lies on each side of that of rhetorical acuteness ; it appears, therefore, double, and when strongly marked with the last organ, forms a prominent round swelling. It is to be observed on the forehead of *Socrates*, *Kant*, *Moses Mendelsohn*, and *Fichte*. The ancients, says G. had an obscure sentiment of the high qualities connected with this structure of the forehead. They always gave their *Jupiter* a front endowed with these attributes.

Under metaphysical subtlety G. understands the power of abstract thinking, as opposed to desultory observation.

XXV.

The Organ of Wit.

This organ lies at each of the outward sides of the organ last mentioned, and when strongly developed, without the two other organs last enumerated, it forms two balls on each side of the forehead, by the *tubera frontalia* of the *os frontis*. But when all are found together they form one great prominence, and these considered as constituting one complex organ, G. terms that of the *spirit* or *power of induction*, including the faculty of seizing and comparing all the various relations of things.

G. began one of his lectures by saying,—“What wit is I do not know;” a confession that might have been well extended to the other talents which he has thus partially united, while he yet considers them as distinct. It should be observed, that it is this part of the forehead, the beautiful swelling of which is considered as so significant of intellect, which G. observes to be often marked in children, and to retreat in advancing years; hence he formerly termed it the organ of *observation*.

XXVI.

XXVI.

Organ of Theosophy.

This organ lies behind the organ of good nature, in the centre of the uppermost part of the *os frontis*. The forehead rises in the middle, and forms (when this organ is strongly developed) a kind of ridge which is frequently left bald.

G. was, early in life, made attentive to the great proportion of bald headed persons whom he found at their devotional exercises before the altar, and at the same time he observed that structure of the crown of the head which has just been noticed. He afterwards made this remark on priests in general, particularly monks, and those who took the tonsure from inclination. He opened *Lavater*, and found that most of his pious characters were strikingly marked by this peculiarity. He recollected the national character and physiognomy of the Egyptians. He found that painters, who may well be disposed to be often, perhaps generally, led unconsciously by obscure feelings in their creation of original forms, had commonly chosen the same figure for the portraits
of

of their saints and martyrs. The head of Jesus is generally of this cast. This vague sentiment became afterwards conviction, from a minute and long continued examination of characters which were familiar to him.

With this organ, which respects the noblest and sublimest sentiment that man can conceive, and when in happy coincidence with other excellent tendencies of the human frame, produces the highest human excellence, Gall closes his specification of individual discoveries with the acknowledgment, that this specification has not the merit of being systematic. He offers it merely as a temporary and provisional statement (*sous condition*), subject to all the additions, modifications, and corrections, which every science of observation peculiarly needs.

CHAP. VIII.

MISCELLANEOUS AND CONCLUDING OBSERVATIONS.

GALL, in the course of his lectures, frequently referred to a variety of observations, which he professed to have made on certain involuntary motions made by persons under the influence of a strong feeling ; or, as he would say, occasioned by the peculiar activity of a particular organ, by which he thinks the locality of those organs receives a strong confirmation. The topic under which he brings these observations he calls *mimickry*. The editor feels himself not authorised to pass it over in total silence, at the same time that he is unwilling to dwell upon the subject.

Gall's general notion is this: when the organs, being excited, are put in a state of activity, a physical sensation is excited in us, of which, indeed, we are not conscious, but
which

which directs and determines the motions of our body. Hence G. explains many common appearances, which every one has observed, though till now no one ever dreamt of pressing them into the service of a psychological or physiological theory.

A man cannot recollect the name of a person or thing; what does he do in his distress? He rubs his forehead backwards and forwards, either over the eyes, or higher on the forehead, just where the appropriate organs lie.

In like manner a man frequently covers his forehead with the palm of his hands, while busied in contemplation or study.

Proud men raise themselves frequently on their toes; they hold their heads backwards, that the organ of loftiness may itself become more elevated.

A sense of danger, the necessity of *circumspection*, leads all animals (man not excepted), to stretch their necks forwards, horizontally, presenting the broad extent of that organ as it were in the front.

The timid man scratches his head on the organ of courage behind his ear, as if he tried to stimulate his feeble organ to activity.

Devotion raises the forehead gently; an instinct has always led mankind to associate
pious

pious sentiments with height. The heaven of all religions is above.

These are the few particulars which the editor was less repugnant to quote.

Physiognomy, which seems to be so closely allied to Dr. Gall's own doctrine, does not, however, meet with a favourable treatment from him. There may be, he says, a relation between the structure of the brain and that of the countenance, but the connection between these is not immediate, nor can it be scientifically ascertained. The physiologist may suspect, but he cannot prove it. *Lavater* would have been more fortunate in his guesses, had he possessed anatomical skill, and proceeded in any way according to scientific rules; but he was a mere sentimental idler. He never made above two judicious general observations. *Physiognomy*, which pretends to explain the qualities of the mind from the *native* features, is not possible; but *pathognomy*, which professes to recognise only the accidental features which have been formed by the influence of the brain upon the countenance is very possible, and receives a strong confirmation from the doctrine of organs. The *mimickry* last mentioned is a branch of this pathognomy.

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The observations which naturalists have made concerning national countenances, have been fruitful in the science of physiognomy, but not as to the structure of the skull. No general results could be drawn, without a previous collection, not of a few only, but of a very large number of skulls, from the juxtaposition of which some general result might follow. It is also necessary that we should make further and more precise remarks concerning the character of nations, before this branch of physiology can be successfully cultivated.

There is a concluding remark which may indispose those towards Gall's theory, who cannot hinder the intrusion of *moral feeling* into the field of *natural observation*. This doctrine repels the notion of the PERFECTIBILITY OF MAN, by which I mean his *indefinite improveability*: for the bounds seem to be fixed in his physical organisation. The *eternal peace* is precluded by the innate irascible disposition. The prevalence of all the bad passions in man cannot be impeded, while the physical tendencies in man remain the same.

Happily, however, this objection is but apparent: not any of the generous wishes or fond hopes of amiable minds, are *opposed to* the doctrines of the philosopher of nature;

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they are all *above* and *beside* them. He who is lead to indulge in beautiful and sublime speculations concerning the grand œconomy of nature and providence, by the evidence of *moral fitness* which he finds *within him*, or the *natural and historic testimony* with which he is acquainted *from without*, will not be oppressed either by the imperfections or fixed organisation of the physical world, as burthening the intellectual and moral universe. He will perceive that it is not absurd to suppose a corresponding change in both. Man may be bound for the present to certain organic limitations and restrictions of his faculties, which can never be infinite in any state of melioration. With his moral and intellectual nature, his organic nature may also be improved. Why should it not?

REMARKS
ON
DR. GALL'S THEORY
CONCERNING THE
ORGANS OF THE BRAIN.

BY DR. C. W. HUFELAND.

IT is with great pleasure and interest that I have listened to Dr. Gall's own statement of his new doctrine. And I am fully persuaded that *he* belongs to the most remarkable persons of our age, and his doctrine to the boldest and most important advances that have been made in the study of nature.

It is necessary to see and hear him himself, in order to perceive how far removed he is from every kind of quackery, metaphysical

enthusiasm*, and the spirit of party. Endued with a rare spirit of observation, acuteness, and the talent of deduction; brought up in the bosom of nature, and by constant intercourse with her, become her favourite; he has detected a number of phænomena in the whole circle of organic beings, which have hitherto been not at all, or but superficially observed. He has ingeniously combined these observations, discovered their analogical relations and import, deduced inferences from them, and established certain truths, which are particularly worthy our notice, because they are the pure result of observation alone. It is thus that he has contemplated the properties, connections, and functions of the nervous system. He himself ascribes his discoveries alone to his having devoted himself to the study of nature with his senses awake, and his understanding unprejudiced; and to his having regularly pursued the operations of nature through all their gradations, from the simplest to the most complete exhibition of plastic power. It is hence

* In the original the author says, *transcendental* enthusiasm, a term which cannot briefly be explained. Gall and Hufeland are alike hostile to the modern metaphysicians; and the compliment here paid to Gall is in fact merely a sneer upon the disciples of Kant, and the other metaphysical leaders.

hence unjust to call this doctrine a *System*, or to judge of it as such. The genuine observers of nature are bad System-makers. They could not see so correctly did they set out in their enquiries with a system ready formed in their minds. They would misunderstand the real objects they contemplated if they troubled themselves too much about unity of idea. Hence Dr. Gall's doctrine is nothing but a collection of instructive, and, in part too, unconnected observations of the phenomena of nature, with their immediate deductions. Nor does Gall himself wish that his assertions should be seen from any other point of view.

It would be yet too soon to attempt criticising and judging the theory decisively. All that can be done is to subject the particular assertions to a long and experimental examination.

My object here is merely to state a few remarks and doubts. For examination should begin with doubt and incredulity, and so it began with me. There cannot be found a more decided adversary of Gall's doctrine than I was ; nor was it till I remarked with what profundity of research, and genuine love of truth, the author of these discoveries proceeded, and what pregnant truths his

doctrine contained, that I began to be a believer: Still I am far from being entirely convinced of its truth. There are chasms, vague positions, and inadequate proofs to be found in it. And I consider it to be my duty towards Dr. Gall, and towards that truth which is the object of his search, freely to point out these to his attention.

It is necessary, in judging of Gall's opinions, carefully to distinguish what is *anatomical*, which respects the form and structure of the brain, from that which is *physiological*, and concerns its functions. The first treats of objects of sensible perception, and can therefore be ascertained to be true only by being sensibly perceived. The second contains the results of perception, derived from various phænomena, by induction, and inference. Assertions of this kind must always be considered as hypothetical, and the truth of them can only be determined by an examination into the inferences and their premises,

First, as to the matters of fact. What has Gall shewn us in the structure of the brain which we did not know before?

This has been so correctly stated by Professor *Bischoff*, in the first of the preceding chapters, that I have nothing to add but that

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I have, without the aid of Gall's preparations, and by means of dissections which I myself made, convinced myself in a great degree of the truth of his statements; more especially as far as respects what he calls the *diverging nerves*. I have seen the separation of the *medulla oblongata* in fascicles; the crossing of the inner pair of the pyramids; the passage of layers of longitudinal fibres, mixed with fibres running across, through the *pons varolii*; the transition of this substance into the *crura cerebri*; the oval form and quality of the *corpora striata*; the radius-like spreading of the substance of the nerves, in all directions on the surface; the unfolding of the brain into a skin, or rather its being spread into a broad surface; and the origin of the optic nerves in the four eminences. All these are objects with which we were either altogether unacquainted, or which we at least did not know exactly and in connection. And even if we admitted that Gall had discovered nothing new in the external form of the different parts of the brain, yet it is undeniable that he has cast a new light on the internal structure and connection of those parts; and this alone would be enough to immortalize his name. Every one who has eyes to see may convince

himself of this; but it is, indeed, necessary to practice the method of anatomical enquiry which Gall has used, and without which he would never have made his discoveries: that is, first, by beginning the examination from below at the medulla oblongata, and pursuing it as it spreads above: and secondly, in using, not a knife which destroys the parts, but blunt instruments, in order to separate and unfold the pulpy parts. I leave minuter examinations of these anatomical discoveries to greater anatomists than I profess to be; but I would have them *honest* examiners, persons who do not confound the doctrine with him who teaches it.

Here I shall confine myself to what is *hypothetical*; and as every thing which cannot be sensibly demonstrated, may be brought under this head, we shall meet here with much that is called anatomical, as, for instance, the course taken by the various congeries of brain.

This too has been completely stated by Professor Bischoff, so that I have nothing to add to it, and can build upon it as forming the essence of Dr. Gall's doctrine.

I entirely coincide with Dr. Gall in this, that what is spiritual or intellectual in us, operates

rates by means of organs*, (which, indeed, every voluntary motion of the arm proves;) that this material condition of the exercise of our intellectual powers applies not merely to the grosser faculties, but to the more internal and subtle energies, sensations, ideas, &c. that the brain is the organ of these more essential and elevated powers of the mind; and that we may assume with great probability, that as the external senses have their particular

* Few will probably be found in the present age, who venture to dispute this position, in spite of the very vague and indistinct notion we form of organs. The reader will be amused by comparing with this opinion that of the eloquent *Sir Thomas Brown*. In his *Religio Medici* he says, with that peculiar felicity of style which renders him one of the finest writers in our language, as he is, one of the most original thinkers of our country. "In our study of anatomy, there is a mass of mysterious philosophy, and such as reduced the very Heathens to divinity; yet, amongst all those rare discourses, and curious pieces I find in the fabric of man, I do not so much content myself, as in that I find not, there is no [any] organ or instrument for the rational soul; for in the brain, which we term the seat of reason, there is not any thing of moment more than I can discover in the crany [*cranium*] of a beast; and this is a sensible and no inconsiderable argument of the inorganity of the soul, at least in that sense we usually so conceive it. Thus we are men, and we know not how. There is something in us that can be without us, and will be after us, though it is strange that that it hath no history, what it was before us, nor cannot tell how it entered in us."—EDITOR.

particular organs, in like manner the internal sense may have its various organs in the brain, as is indeed intimated by the variously formed and different substances in the brain. But this opinion is not new or peculiar to Dr. Gall, but has been long and frequently asserted by medical men. Dr. Gall himself admits this, and cites particularly the late Dr. *Mayer* *.

But I am of opinion that we ought to distinguish between the spiritual substance in us, in as much as it has a reference to the world
without

* As a proof how long I have been of Dr. Gall's opinion, even without knowing him, I cite the following passage, which I wrote fifteen years ago:—

“ I hope my readers will not here misunderstand my meaning, and imagine that I reckon the soul to be a part, or production, or property of the body. This is by no means the case. The soul is, in my opinion, something totally distinct from the body, a being of a totally different, more exalted, intellectual world; but in this sublunary combination, and in order to be a *human soul*, it must have organs to fit it, not only for action, but also for sensations, and even for the higher functions of thinking and combining ideas. The first *cause of thought* is, therefore, spiritual; but the *business of thinking* itself, as carried on in this mortal machine, is organic. In this manner alone can be explained that mechanism, in many of the laws of thought, and the influence of physical causes in improving or disordering the function of thinking; and one may consider the function as material, and cure it (a circumstance which often occurs

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without us ; and is to be put in connection with it ; and this same spiritual substance, in

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to us physicians) without being a materialist ; that is, considering the soul the first cause of it, as matter, which, to me, at least, appears to be absurd."

Art of Prolonging Life, v, 1, p. 203.

There are still more striking resemblances to Gall's ideas to be found in "Mayer's Treatise on the Brain," the spine, and the origin of the nerves. Berlin, 1779, I will quote only a few passages :—

P. 36. "The *pons varolii*, the *medulla oblongata*, and the *medulla spinalis*, are the parts of the brain which the creator has most closely connected with life."

P. 38. "It may be asked, Do the operations of the different powers of the soul take place in different parts of the brain, especially organised for that purpose ? This is rendered probable by the partial loss of particular powers of the soul, by disease and by wounds."

P. 41. "I see no contradiction in assuming, that each of the operations of the soul takes place in particular departments of the brain. As the particular parts at such a spot become, by the more frequent repetition of their operation, more developed, the impulse of the juices there will be encreased," (consequently their size enlarged.)

P. 43. "It is a much more probable opinion, that the functions of the soul are performed in the parts of the brain itself, rather than in its cavities ; &c. but it would be an extremely rash undertaking to attempt fixing with certainty, the seat and disposition of the various faculties of the soul."

There is good plain sense in this note of the learned professor's work ; but it cannot pass for a moment as a specimen of metaphysic correctness. We may assume an organ

as much as it is conscious of its own energies, reflects on them rationally and freely, determines itself, wills, orders, and brings unity into the variety of its perceptions. These higher, peculiar operations of mind, are most assuredly not attached to or modified by organs; and this is also admitted by Gall completely, when he asserts, " I know no organ for reason, will, consciousness, memory; for these faculties belong to all organs, are bound to none in specie, but are the common characters and qualities of the whole."

Besides, he himself calls these organs only conditions and pre-dispositions of certain energies, which, of course, supposes a something else as necessary to call forth those energies into action; that is, he supposes a certain spiritual substance, but the nature of which is foreign from the subject of his enquiry.

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as a connecting instrument, to bind an immaterial cause with a material function, (though this is incorrectly said, for *function* is merely *ens rationis*, a thing of thought.) But this *explains* nothing, for the organ itself must be either material or immaterial; if material, what unites it with that which is immaterial? and *vice versa*. The *quis custodiat ipsos custodes* of the poet, comprises the great practical difficulty in all political institutions; something like it is the case in metaphysical speculation; who shall explain the explanation?—EDITOR.

But Gall goes further and says, these organs lie on the surface of the brain ; that continuation or extension of the nerves of the brain which we call the *hemispheres* is their seat, and I am able to point out the place of the greater part of them : further, they are denoted by elevations on the surface of the brain, which effect corresponding protuberances of the skull ; and we are therefore enabled to infer the internal tendencies of the mind from the external form of the skull. The proofs have been stated above.

Upon this I will take the liberty of stating some remarks and doubts, which at least prevent my considering the point as absolutely decided.

I. The whole is and remains but an hypothesis, to whatever high degree of probability it may be brought, for the proofs advanced do not exhaust the subject, nor remove all objections.

The principal proof brought forward in physiology to ascertain the function of an organ, consists in shewing that the actual exercise of the function always accompanies the existence of the organ, and that on the contrary, the destruction of the organ entirely or partially destroys or impedes the exercise of the function. This proof is more or less convincing

convincing, according to the number of individuals, and still more according to the various kinds of organic beings, in which this coincidence has been found. As for instance, the function of the nerves, as organs of motion and feeling, is proved by feeling and motion being destroyed by the cutting or pressing the nerve. It may be asked, has Gall been able to bring forward this proof concerning the organs of the brain?

It seems to me that he has not. For however striking it is to perceive, that through the various classes of animals up to man, certain tendencies and predispositions of the soul are, for the greatest part, found united to certain protuberances of the skull; yet the proof, to be decisive, ought to be without a single exception, for Gall himself admits, that the law must be false, if a single exception can be found; and I have found such exceptions repeatedly since I have begun my examination. I will mention only two. Prominent eyes (goggle eyes) denote, according to Gall, a strong verbal memory, yet I have seen such eyes repeatedly, in persons whose memory of this kind is very weak; and I lately met with the organ of theosophy very strongly marked, like a ball, in a person who did not manifest the least disposition of the kind.

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As to the second proof arising from the want of the function where the organ is wanting: here it ought to be shewn that the destruction of the organ is attended by the loss of the function, but a wound on the brain is so easily mortal, that this kind of proof seems impossible. In cases of wounds, we have instances of large masses of the surface of the brain (and of course organs, according to Gall,) being taken away, and the individual has survived. But I am not aware that any one of these persons has been observed to lose any of the predispositions, or tendencies, or talents, affixed to the part of the brain so lost.

II. Size and energy do not always stand in proportion to each other in an organ. The internal quality, and the more or less of power lying in the mass, determines also as certainly the energy of the power; and quality is able to supply what may be wanting in extent or quantity. This is the difference between intensive and extensive perfection, and it is therefore an error to infer perfection from size alone. This is also taught us by experience. Little men are in general more energetic than large men, and small eyes see with more strength, and last longer, than great eyes. That which is true of other organs must

must * also be the case with the organs of the brain. The greater or less power in an organ cannot therefore depend on its size alone, yet Dr. Gall's doctrine is supported entirely by this proposition.

III. It is well known that organic parts are often enlarged by disease, but which, far from being a proof of heightened energy, shew only that the nourishing juices of that part have been encreased by disease; and the energy of the functions of such organ is diminished, not improved. They are called hyperorganisations, enormities of the substance. Thus the liver, stomach, heart, any one of the viscera, an arm, an eye, a foot, may be unusually enlarged, but we infer a diminution, not an increase of power. A similar state of things may take place among the single organs of the brain, and should we not err then, in inferring an encrease of power from an encrease of size? Nor would it be a refutation of such an argument to object that only one of such organs would be in that case

* Our commentator is surely guilty here of a mistake (from which Dr. G. himself will not be thought free), in confounding *must* with *may*. His argument in fact is sufficiently strong, when he concludes there *may be* an intensive vigour independently of size.—EDITOR.

enlarged;

enlarged; for it often happens, that corresponding organs and limbs are alike affected; as both eyes and both feet may swell together: besides, there are organs in the centre of the brain which are but single to the feeling.

• IV. A change may take place in the interior of an organ, occasioned by disease, by which its energy may be destroyed; or in other words, the organ may be lamed. But the size of the organ is not changed, or at least the protuberance of the skull is not flattened; and even where the organ disappears within, the skull does not always sink, but the space is filled with bone. Here again, therefore, we can draw no inference from the existing protuberance to the existing power; and even the substance of the nerves, when lamed, can long retain its size and extent, as we experience in the external nerves.

V. We will admit that the skull, not only at its first formation, but even during the whole of life, assumes the shape of the brain within; this is proved partly by the law of the never-ceasing regeneration even of the firmest parts, partly by the remarkable instances of excavations and change of form in the hardest bones, by means of tumors, aneurysma, &c. The internal surface of the skull clearly shews the impressions of the vessels which lye below.

Still, this does not seem sufficient to justify

our considering all the protuberances of the external surface of the skull to be products of the internal expansive power of the brain.

My reasons are these :

a. The two laminæ of the skull, do not, it is obvious, always run parallel. This is shewn even by an horizontal, and still more by a vertical section. This may be exhibited most sensibly by the following experiment. If the external elevations of the skull are the mere result of the form of the brain, then the internal surface of the skull must have corresponding depressions wherever the external surface has any elevation. Hence a model of the skull, taken in gypsum or wax from the internal surface, would have precisely the same formation as the skull, except that it would be somewhat smaller. I have repeatedly made this experiment, and have *in some* remarked a sensible diversity between the skull and such impression.

b. Various causes may occasion the bony substance of the Diploe to accumulate, and consequently remove the external from the internal lamina, and form an elevation where there is no corresponding depression *.

c. It

* This is asserted by Gall himself; and it ought to be observed that this and the preceding objections are directed more against the certainty of our knowledge than the reality of the fact.—EDITOR.

c. It is certain that the muscles have the effect of producing a protuberance on the bones. This is seen on the whole body where the muscles are attached, and this must also take place on the skull; and thus the protuberance on the spot where the temporal muscle is attached, and that where the muscles of the *os occipitis* are attached, (the organs of parental affection and the sexual passion) are on no account to be considered as product and proof of the quantity of brain. The protuberance on the temple often proves only that a person chews strongly, and the organ of parental affection, that a woman has borne heavy burthens on her head and shoulders*.

d. The protuberances on the lower parts of the *os frontis*, over the eyes, are clearly derived more from the internal extension of the bone which we call the frontal sinuses, than from the brain; and thus our judgement concerning the organs which lie here is very fallacious. I have seen skulls in which these sinuses are extended half over the *os frontis*.

e. It is undeniable that external and internal accidental causes may produce protuberances on the head. Of external causes I will enumerate only blows and falls; of the internal,

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* This objection has been anticipated and answered.—
EDITOR.

the gout and venereal disease, which it is known can produce protuberances that last for life. Gall says, that such protuberances may be sufficiently distinguished from those natural organic protuberances, by being on one side only of the skull, and not alike on both sides. But this will not prevent deception in those cases where the organs on both sides meet, and unite and form but one elevation, as for instance, the organ of loftiness, theosophy, and parental affection.

I wish, besides, that exact enquiries were instituted in those countries where it is the custom, from the earliest infancy, to carry heavy burthens on the head, as for instance, on the banks of the Rhine. A permanent pressure from without must necessarily, according to the same laws, press the skull inwards, (and thus hinder the formation of the organs in this part) as the permanent pressure of the brain from within presses the skull outwards. The latter is a fundamental position of Gall's doctrine, and if that be true the other must be true likewise. Hence in those countries the organs of loftiness, theosophy, and firmness must be oppressed, and those tendencies of mind and character must also be wanting, for the organs are mechanically hindered in their formation : If therefore the
organs

organs were found there in spite of that pressure, or if those organs were not found, and those qualities of mind were still there, in either case it would furnish an argument against Dr. Gall; for, in the first supposition, it would appear that a permanent pressure does not alter the formation of the skull, and thus the formation of the skull by the pressure of the brain would be unproved. In the second supposition, it would be evident that the qualities of the mind could exist without the external visible organs, and then the whole doctrine of organs would be false*.

VI. Dr. Gall confesses, that he is not acquainted with every organ and its seat, and there are unquestionably many qualities of the mind and temper remaining, for which no organ has yet been found, and which yet must have one; as these qualities are not artificial productions, but manifest themselves in earliest infancy, very strikingly, as predispositions or tendencies of character; as for instance, Self-love†. It is a quality we often remark

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* Here the author has either grossly misunderstood Gall, or he is guilty of a great error in reasoning. G. asserts that the inert bony substance is formed altogether by the brain; not that it reacts upon it with like power.—EDITOR.

† That *Self-love* is no simple principle of our nature, as has been long incautiously admitted and taken for granted; upon

very young children, that they refer every thing to themselves, keep every thing for themselves, part with nothing, and are envious towards others; while on the contrary, we perceive in other children, from the very first, an impulse to forget themselves, to share every thing with others, be kind and social. Vanity, rapacity, avarice, love of fame, are but products and various forms of selfishness. Self-love ought, therefore, to have its organ, as well as the love of others, and the impulse to murder would then be explicable as a disease. Taste and smell ought, besides, to have their organs in the brain, as well as the sense of tones and colours, for our taste and our judgement concerning it are evidently different things; nor does it seem to me that opposite qualities can be well explained, as G. explains them, by the mere want of organs. The want of good humour is mere indifference,

upon which assumption modern systems of morals have been established; has been recently proved with all the strictness of metaphysic demonstration by a train of acute and original arguments in a small work, entitled, "*An Essay on the Principles of Human Action*," published by Johnson. This little tract has supplied one of the greatest desiderata in moral philosophy. The author has succeeded in proving, to the logical understanding, a doctrine which the better feelings of noble minds had embraced in opposition to the fashionable opinions: that, *Man is capable of purely and absolutely disinterested actions*.—EDITOR.

ence, not actually bad temper ; the want of love is not hatred ; nor the want of avarice liberality. Must we not assume that these opposite inclinations have each their peculiar organ ? And what, if we perceive that an inclination suddenly changes itself into the very contrary, of which we have instances ? If we see a liberal man, on suddenly acquiring riches, become avaricious ? Has a new organ sprung up within him ? This is not conceivable.

Whether these still unknown organs be found or not, we must assume that they really do exist, and in both cases a troublesome difficulty arises.

If they are not found, this renders it very uncertain what functions we shall ascribe to the organs already found, for it may then, aye, it must then follow, that the departments of the skull already ascertained to cover certain organs, must also cover at the same time other organs ; and who will then be able to distinguish what belongs to the known and what to the unknown organs ?

Should, however, these organs be found, we shall then at length find the surface of the brain so covered with organs, that the districts assigned to each will perpetually become

smaller, so that it will become impossible to distinguish them by feeling.

To this we have to add, that Dr. Gall assumes that each circumvolution of the brain (*gyrus cerebri*) is a distinct organ; in that case there would be 30 organs on each side; and the *gyri cerebri* do not, as is well known, press upon the exterior surface of the skull.

VII. Dr. Gall divides the whole congeries of nerves into the diverging and converging, and asserts, that wherever the one is found, the other also is. Each nerve, and also the brain, unites both.

Ingenious as this idea is, and though it harmonises with the fundamental functions of the nervous system, yet it has not been experimentally demonstrated. I certainly perceive that the one portion form Ganglia, and the other Commissures; that the one is somewhat stouter than the other: But I do not, and cannot see that the one diverges * and the other converges.

The characteristic sign that the diverging mass is accompanied by arteries, the diverging mass by veins, is, for this reason, untenable,

* Yet our critic declares at the beginning, his conviction of the truth of Gall's notions concerning the *diverging nerves*.—EDITOR.

nable, because in every part of the human body, veins are found wherever arteries are.

VIII. Where then is the central point of the congeries of diverging and converging nerves? There must be such a point, for otherwise the idea of diverging and converging would have no meaning, and the whole nervous system would have no unity. But, according to Gall, I see every where nothing but diverging and converging substance. Even the *medulla oblongata*, which, according to him is the point of union, or kernel of the whole system, consists of single fascicles of nerves which have individually their particular function.

IX. I must add a remark as to the seeing with *one* eye. This assertion may be very easily refuted by the following simple experiment. Let any one hold a broad sheet of paper perpendicularly before him, with the back against his forehead and nose, dividing as it were the face, and of course the circle of vision. By this means the rays of light on the one side cannot enter into the eye on the other side, through the opaque body which divides the face; and if we actually see with one eye only, we should in this case behold only one half of the circle of vision: but we do

do in fact see the whole, and thus the assertion of Gall is refuted. We must, therefore, thus modify the position, that every man sees in general better with one eye than with two, either because his eyes by nature have unequal strength, or because he has accustomed himself to use the one more than the other.

X. I cannot approve of what has been said concerning conscience, for this is not an object of experiment, and does not therefore come within the sphere of Dr. Gall's doctrine. It has no organ, and our concern is with organs only; nor can I applaud the kind of explanation here given. Conscience is said to arise from the relation of our actions to our inclinations, but it may be further asked, why does the agreement of our actions and inclinations delight us, and their disagreement give us pain? This shews us that our internal self-satisfaction or dissatisfaction has its origin in a higher principle of our mind, that is, the *principle or sense of truth*, of which our sense of right and wrong, good and bad, beautiful and deformed (in a higher sense of these terms), are so many different modifications, and of which we have the clearest marks, even in the child. This alone is conscience, and it is the opposition of true and false, right and wrong, good and bad, which constitutes

constitutes its sphere; and not the dissatisfaction which a man feels when his inclinations are not gratified; for otherwise the regret which an epicure feels when he sees a spoiled dish, would be an affair of conscience: yet this follows from Gall's explanation*. On the contrary, according to the derivation given above, conscience is the august pledge of a more noble and divine descent; it distinguishes us essentially from the brute creation, and connects us with a loftier world of spirits, between which and the animal world man stands, and of which we have but an imperfect pre-sentiment, resembling, perhaps, what the brute creation have of us. I should be disposed to assert that conscience is moral instinct, and as the animal seems sometimes to approach to human nature, but merely instinctively, which man alone understands, and which ceases to be instinct in him; in like manner it seems as if man has an instinct of the world of spirits, which he is in some other mode of existence to learn to understand.

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* Dr. Hufeland must have misunderstood his author, or Dr. G. must have expressed himself worse than the Editor is acquainted with, if this comment were necessary.

The result of my examination I would thus express. I adopt Gall's doctrine in as much as it assigns the energy of the mind to the brain as its organ, and in this organ assigns to particular and distinct energies a particular and appropriate organisation of the brain. But I deny that these individual organs are always intimated by elevations of the surface of the skull. Still more confidently do I deny that the elevations upon the skull arise solely from this cause, and that therefore a sure inference may be drawn from them to the dispositions and tendencies of the mind. The doctrine, therefore, is true in theory, but there are no means of applying it in particular cases. In other words, the *organology* is on the whole true, but the *organoscopy* cannot be relied upon.

ON THE EFFECT AND APPLICATION OF
GALL'S DOCTRINE.

Useful and pernicious Consequences.

I COME now to a point which does not, indeed, concern the science itself, but which interests a great number of persons still more; that is, what is the use of this doctrine? Are its consequences salutary or pernicious?

I am well aware how unjust it is to put such questions too soon to the discoverers of new doctrines, and to judge of them by the answer: Every truth is good and useful; every discovery, if it be really one, is an extension of the sphere of truth, and hence also of human perfection and felicity, which is the same thing. Its consequences *must* be good and salutary, however unable we may be to perceive it, and if it injure, it can be only from its abuse; and what is there in the world, even in the most excellent things, which may not in this way become injurious?

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For the present I will make but a few remarks, necessary to prevent such abuse, to correct unfair judgements that may be formed, and suggest hints concerning the future application of the doctrine.

We may consider this application as it is general, and as it is particular.

As to the general application of it, I must reply first to two objections, which were they well founded would certainly have the greatest weight, viz. *That this doctrine teaches materialism; and, that it deprives the human mind of its freedom, and consequently of its morality.*

The first point charges this doctrine with representing the spiritual principle in us as a somewhat corporeal, dependent on organisation, and being one with it; thus giving aid to the fatally prevailing doctrine of materialism, according to which mind is but a mere attribute of body, and perishable with it.

This is obviously not the case. Gall carefully distinguishes the spirit, the soul, from the organisation; the organs are the material conditions of its activity, not the active being itself; without the presence and influence of the spiritual being they are nothing. Still further, he excepts the higher powers of mind from

from the state of dependance on single organs, and considers reason, consciousness, and volition, as hovering alike over all. He who finds materialism in this, may find it as well in the assertion, that the body has influence on the mind, and the mind on the body, and yet no one doubts of this. It is the same whether we say the soul moves the arm by means of the nerves, or, the soul is affected by light through the optic nerves; or whether we say the soul requires the co-operation of certain organic functions for the calling forth of her higher energies; for nothing more is in fact asserted than that the soul needs in this sublunary existence the aid of a co-operating material conformation (viz. of organs) in order to act in this sphere, and at the same time be limited and determined in this its action. It is here assumed that the soul is an essence altogether distinct from matter, and yet in this life indissolubly bound to the world of matter, by a bond of union utterly inconceivable by us. The Materialist and the Immaterialist differ in this; the one considers matter as the *sole cause*, while the other considers it as the condition (*conditio sine qua non*) of the active powers of the soul. The latter is Gall's mode of thinking, and he who finds materialism in it, does not understand

stand what materialism or what Gall's doctrine is, or cannot and will not understand it, because he is already a materialist, and glad to draw any doctrine into union with his favourite system.

Though superfluous, I will add another, and that a decisive observation. Were the organs the sole cause of the activity of the mind, it remains to be explained what that power is which prevents their being all alike active, which gives them their direction, and allows at one time an inclination to prevail, and at another time restrains it. What is this determining power? It cannot be the organ itself, but something out of it or beyond it; hence it must be the will, a something spiritual, independant of organisation. Further, in what does the difference lye between sleep and wakefulness; between the activity of the mind when awake and when dreaming? It lies in this only, that in the one the organs of the brain act without spontaneity and free will, and in the other freely and spontaneously. And does not this shew that the activity of the organs and that of volition are different things?

The second reproach which concerns the freedom, and of course the morality of actions, is equally ill founded, for the organs determine

determine merely the disposition or tendency, not the actions themselves. These are left to be directed by our free will, and it depends upon us to exercise as we please these organs of the soul, as it does to use the external organs of the body. The only difference is this, that he who has a very strong organ will have a stronger inclination to exercise the activity united with it, and more difficulty in abstaining from that exercise, than he will have, whose organ is feeble. Besides, this notion is in no respect new; we do but change words, and call new organs, what before were termed the good and bad dispositions and tempers of men. Every one has been long convinced that men are born with different inclinations, some of which manifest themselves very early in life, so that in children of the same parents, and educated together and alike, very different dispositions and inclinations may be observed. Hence there have been long a class of vices and virtues of temperament, in reference more to organisation than liberty; and what but such violent inclinations and desires opposing the better knowledge and will of individuals, have the theologians had in view when they have treated of original sin, temptations of the devil, &c. &c. Gall adds to this merely
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certain organs as the seat of such inclinations, &c. the will remains still free. And it is with these organs of the mind, as with those of the body, that by not being exercised not only is the act hindered, but even the organs themselves lose their fitness for action ; and in like manner, by such exercise, they are developed and encreased. Thus, by means of moral culture, the disposition and inclination may be modified and diminished. Hence the great importance of early education, while these organs are in growth. At this period, by violence or punishment, the development of organs may be hindered, and their influence, during life, diminished, as is known to be the case of the bodily organs when not exercised in early youth.

I proceed now to the special application of this doctrine, and this may be made as it respects physiognomy, ethics, education, the administration of justice, and the practice of medicine ; and this application may also be considered as it respects a general or an individual judgement.

And here I must begin by observing, that though in my opinion the general application is not injurious, I yet consider each particular individual application to be, for the present, premature, hazardous, and even unjust and dangerous

dangerous to the individual. I have shewn above, how much is wanting to complete certainty, in inferring the form of the brain and its organs, from the external shape of the skull; how many exceptions must be allowed for from external circumstances, diseases, wounds, the motion of the muscles, &c.; and that hence, however well established the general positions may be, we cannot still be confident in our particular application. The rules of nature may, as Gall very justly observes, be in themselves fixed and invariable, and not even suffer an exception; still these rules may be variously modified and changed in their appearances in nature, as we see in plants and trees, of which every species has a distinct principle of formation and growth; and yet, through external circumstances, the various individuals of the same species may display the greatest varieties and diversities of growth and form. In respect to the shape of the skull, the deviation from the rules laid down by Gall may be but the hundredth case, but not knowing that hundredth case, our judgment of the ninety-nine cases must necessarily be uncertain. To this we must add the very important circumstance, that the organ betrays only the tendency, the disposition towards any quality or energy, not the quality

itself. He for instance who has the organ of cupidity, may have a stronger inclination to steal, but still be no thief; his power of free action may so keep down the power of the organ, that not only the act to which it tends may be repressed, but even the organ itself be lamed and lose its power, as we see in the external organs of our body. How unjust, therefore, would it be, to cast suspicion on a person having such an organ, when he, perhaps, on the contrary, deserves our esteem in a higher degree, than he who has by nature, no impulse to correct and subdue.

Besides, what renders the individual application still more uncertain, is the difficulty of discovering the organ by feeling. Gall himself confesses, that among his many scholars, there are very few, indeed, who possess that address, that delicacy of tact, which is requisite to render their observations worthy to be relied upon. To acquire this skill demands habit and attention, as it were a peculiar education of the hand.

Application

Application to Physiognomy.

It is certain, that should the physiognomy of the skull be in general confirmed, it would offer more reality and certainty than the physiognomy of the countenance which *Lavater* taught, as it respects solid and firm parts, while the face consists, for the greater part, of soft and changeable features. Indeed, the skull alone furnishes us, properly speaking, with a physiognomy; that is, a doctrine or science of natural qualities or properties: while the common physiognomy is (more correctly) rather pathognomy, or the science of the affections and passions of man, as far as they can be expressed on the countenance, and gradually give it a certain form and character.

But still, for the reasons above stated, craniology affords us no certain physiognomy as applied to individuals.

Application to Education.

It would be a great abuse of this doctrine to determine at once the moral and scientific

propensities of children from the fancied organs of their skull, and fix their education accordingly. It might make many a one wretched.

But still it may in general serve to direct our attention to the early developement of propensities and tendencies of character, and to the necessity of early repressing bad and encouraging good qualities; as by these means the several organs would be either impeded or promoted in their growth, and even in infancy determined and fixed for life. It may also help to destroy the generally prevalent and fatal mistake, that children are to be trained to good conduct merely by instructing and convincing their understandings, and never by inspiring them with implicit faith and blind obedience, though many things in this age can only be believed, not comprehended, and many virtues must be made a matter not of insight but of mechanical habit. The evil of the contrary practice is this, that by waiting till the duties of life can be comprehended, the time is lost when they can be rendered habitual, and, as it were, natural, so that they in future remain mere notions and opinions, not deeply rooted and seemingly natural feelings. Gall's doctrine shews, that by mechanically hinder-
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ing a bad tendency from coming into action, (whether by external motives or not) the organ is prevented from developing itself, and the root of the evil is destroyed; and in like manner by cultivating and strengthening good habits and thoughts (though by mechanical means) in childhood, the organs by which they act may be so developed and improved, that the tendency to good may be increased. In this way we may cultivate in men, physically as well as morally, a moral and pious nature, undoubtedly far more valuable than the artificial talents so elaborately produced by our modern systems of learned education.

Application to Morals.

This doctrine, generally accepted and applied, is certainly advantageous rather than pernicious to true morality. It leaves the mind free, as has been already shewn, though it points out how far it is limited by certain pre-determined tendencies to evil; and in this it also impresses upon us the necessity of moral culture, in order to subdue those tendencies, and thus raises the worth of morality as well in general as in particular instances, by making the difficulty of the struggle more

apparent, where nature has given strongly developed organs. It is true, it teaches also that at last, in extreme cases, the tendencies may be so decidedly preponderant, as to be no longer governable by the will; yet here also it leads us to feel indulgence and compassion towards those morally unimproveable men whom (viewing them in this light), we cannot possibly hate, but must pity, as those who are incurably diseased. It shews us also, and this is of peculiar importance, that it is by education that morality is fixed and secured to us, as our own inmost property, and that it is only by the influence of motives raised above this life, that is, by religion, that a defective organisation can be remedied, the natural organic impulses subdued, and man determined to what is good and holy, even against his inclination and his will.

But it would be otherwise were we desirous to determine by this doctrine individually the moral worth and character of men. This is not to be known by any art which lies in the fingers, by any swellings or protuberances of the skull: indeed, if we seriously reflect, we shall be convinced that the judging of the moral worth *of others* is, generally speaking, not the office of men who are so little able to judge properly even of their own worth. But
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mixing with moral judgement a physical observation like that of Gall's doctrine, what errors would not be committed, how often might the bad man be fancied good, and, what is far worse, the good man be deemed bad ! He who had conquered decided propensities to evil (the highest triumph of virtue), and raised his mind to purity and goodness, might still appear to be a dangerous, and be a suspected man ; while he who had no organ of vice, and whose freedom from it would therefore suppose little virtue, would be esteemed, compared with him, an angel of light.

Application to Jurisprudence.

The influence of this doctrine upon criminal justice is important. If we assume a predisposition to certain crimes in the physical organisation of the subject, his criminality may be deemed less, but he himself becomes more dangerous ; criminals enter into the class of sick men, and punishments are remedies. Where a cure is possible, occupation, instruction, punishment, are to be considered alike as means of cure ; but where all these are of no avail, when it seems that the power of the
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ill-disposing organ is so predominant that it can no longer be regulated by the will, then the individual is to be treated like one insane, removed from the great body of society, that he may not injure, or possibly infect it. This separation cannot always be effected by entire seclusion; he is dangerous to every one, and the life of one so useless and wretched may be of no worth at all. It may be necessary (to use a Mosaic phrase) to cut such a soul off from his people, not as a punishment, but for the reason that makes the surgeon amputate a useless and incurable limb. This doctrine, therefore, instead of leading courts of justice to be unwisely mild and gentle, should rather make them severe in their judgements, not indeed with a view to punish a fault that could have been avoided, but in order to prevent crimes in future, and form a conviction that there are no other means of individual reform, or general security.

But of course the general application only of the doctrine is meant, and on no account a particular application to individuals. The magistrate has never any thing to do with the moral worth of the subject, his concern is only with his actions. He has no right to infer the probability of future violations of the law but from previous offences; and though
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he should infer, from long continued and repeated acts, a strong physical impulse, he has no right to form such inference from an examination of the organs of his head; the less so, as there still prevails so much uncertainty in the forming of individual judgements.

This applies also to *judicial medicine* *. The organology is not yet advanced far enough to furnish grounds for determining the greater or less culpability of the individual; and if it were, it would not materially affect the administration of justice, for it has been shewn that that strong natural impulse to commit a crime which might lessen his moral guilt, would at the same time render him still more an object of punishment, politically, in reference to the greater danger to the public from the influence of that natural impulse.

Application

* *Medicina forensis*. This is a topick in the administration of justice in Germany, unknown, at least as a distinct branch of study, to our English practitioners and lawyers. But it is considered of so much importance, that lectures are read upon it regularly in all the great universities. It comprehends all those subjects upon which medical men are in the habit of giving their testimony in courts of justice, of course all the symptoms by which poisoning, wilful murder, the birth of a bastard child, dead or alive, &c. are to be judged of. A great variety of matters are included in it.—E.

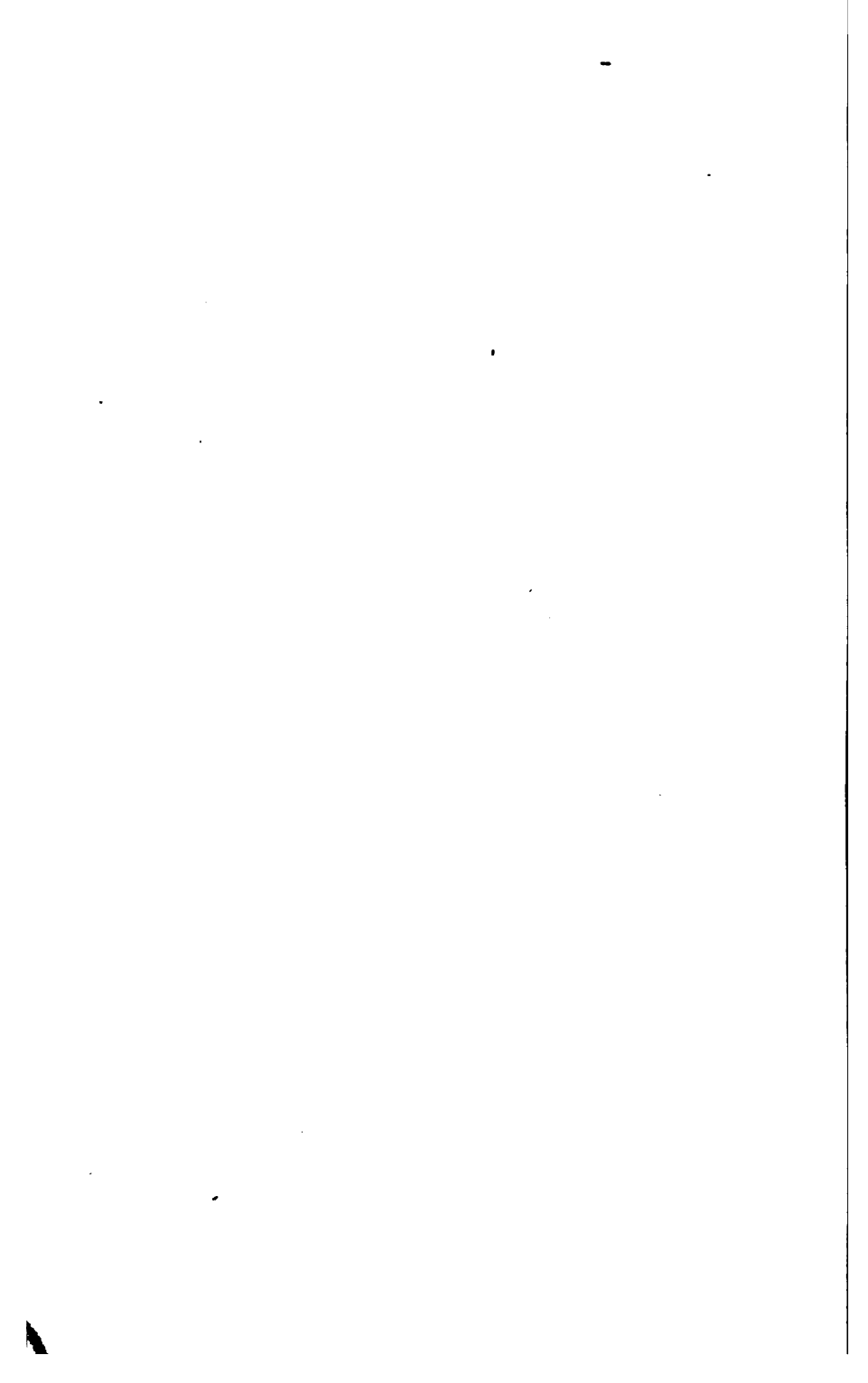
Application to the practice of Medicine.

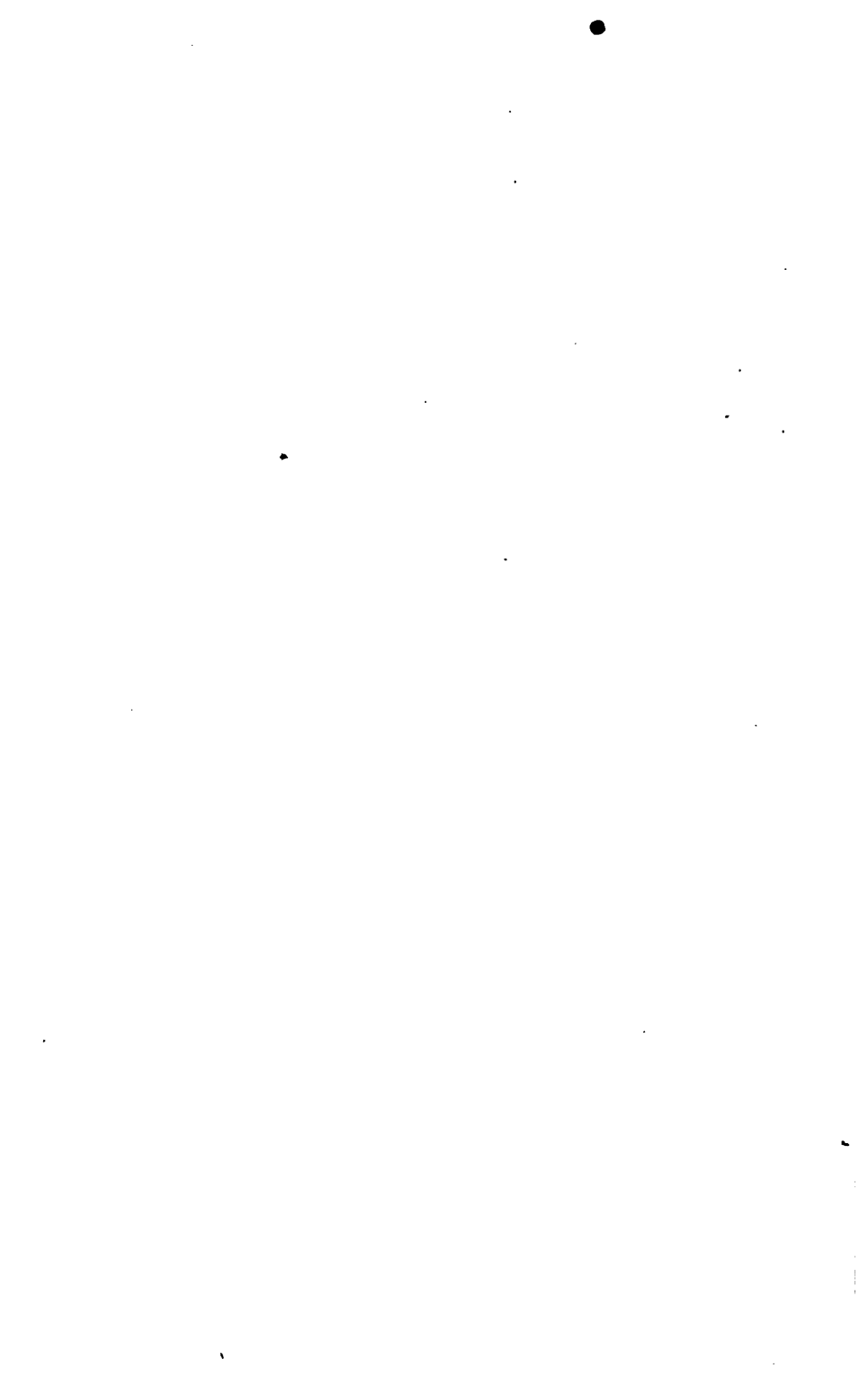
Though I estimate the new discoveries of Dr. Gall highly, as enlarging our medical knowledge, I cannot yet convince myself of their utility in practice.

The only cases in which they might be useful, are those of the diagnostic and prognostic symptoms in diseases of the mind. We might be often able to determine, with greater probability, the seat of the suffering mental power, and to judge of the probability of cure from the more strong or weak development of the organ.

But in the cure of diseases, there seems to me to be no new and essential remedy afforded, for the knowledge we already have concerning the functions of the brain and nerves, has taught us the use of topical bleeding, the pouring of cold water, &c. in cases of fever and madness, and also where the external nerves, viz. of the genitals, are debilitated, to apply stimulants to the spine, &c. The only thing in which Gall's theory might be of use, would be the more exactly ascertaining the place where local remedies are

to be applied, when single organs may be particularly affected; yet even this advantage does not seem to me to be attainable, so as to render it of essential worth, for neither the operation of the remedy, nor the seat of the organ, can be ascertained so exactly as to justify our presuming that this topical application may be eminently useful. It is certain that bleeding, or applying cold water, does not affect the spot alone where the application is made, but the whole head, and we may be assured, that if the temperature of the whole brain be made more low by such means, or if it be raised by the application of stimulants, the individual organ will also be affected in like manner. Were it otherwise, did much depend on the exact application upon the morbid organ, it would be a fatal circumstance; for, as the extent and bounds of the several organs cannot be exactly defined, and a morbid organ lies very near others in a healthful state, that application which might be useful to the morbid organ, might at the same time injure the others. The places, therefore, for the drawing off blood, are more properly chosen where the blood vessels within, meet in large branches, or particularly unite with the external vessels.





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